EXOR International

Industrial Computing Solutions

Fan-less Computer
eCC2100, eCC2100A, eCC2110, eCC2110A

User Manual

www.exorint.net

Contents

Preface

Copyright iv
Disclaimer iv
Acknowledgements iv
Regulatory Compliance Statements iv
Declaration of Conformity iv
RoHS Compliance v
Warranty and RMA vi
Safety Information vii
Installation Recommendations vii
Safety Precautions viii
Technical Support and Assistance ix
Conventions Used in this Manual ix
Global Service Contact Information x
Package Contents xii
Ordering Information xiii

Chapter 1: Product Introduction

Overview 1
eCC2100/2100A 1
eCC2110/2110A 2
Hardware Specifications 3
Getting to Know eCC2100/2110 Series 5
Mechanical Dimensions 9

Chapter 2: Jumpers And Connectors

Before You Begin 13
Precautions 13
Jumper Settings 14
Locations of the Jumpers and Connectors 15
Jumpers 17
Clear CMOS 17
COM3 RS232 RI Pin Power Select 17
Panel CCFL LVDS Backlight Power Select 18
Connector Pin Definitions 19
External I/O Interface - Front Panel 19
USB Ports 19
COM5 Serial Port 19
COM6 Serial Port 20
GPIO Connector 20
Status Indicators 21
ATX Power On/Off Switch 21
External I/O Interface - Rear Panel 22
9-36V DC Input 22
Remote Power On/Off Switch 22
VGA Port 23
Speaker-out Jack 23
LAN1 and LAN2 Ports 24
LAN3 (eCC2100/2110 only) and Dual USB Ports 25

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

COM1 and COM2 Ports 26
COM3 and COM4 Ports 27
USB 8-9 Connector 27
Internal Connectors 28
COM5 Connector 28
COM6 Connector 28
Remote Power On/Off Switch 29
CPU Fan Connector 29
Internal Power/HDD/LAN Power/LAN Active LED (RTC Connector) 30
SMBus Pin Header 30
Mic-in Connector 31
Power Output Connector 31
LVDS Connector 32
Panel CCFL Connector 32
CompactFlash 33
Mini-PCIe Slot 34
PCI Slot (Low Profile) 35

Chapter 3: System Setup

Removing the Chassis Cover 36
Installing a SODIMM 37
Installing a Wireless LAN Module 39
Installing a SATA Hard Drive (eCC2100/2100A) 41
Installing a SATA Hard Drive (eCC2110/2110A) 44
Installing a SATA DOM 48
Installing a CompactFlash Card 49

Chapter 4: BIOS Setup

About BIOS Setup 52
When to Configure the BIOS 52
Default Configuration 53
Entering Setup 53
Legends 53
BIOS Setup Utility 54
Main 54
Advanced 55
Boot 61
Chipset 63
PCIPnP 66
Security 67
Exit 68

Appendix A: Power Consumption

Test Configuration 69
Power Consumption Measurement 70

Appendix B: GPI/O Programming Guide

J8 - GPI/O Connector 71
GPI/O Programming Sample Code 71

Appendix C: Watchdog Timer Setting

Watchdog Timer Setting 73
ITE8783 WatchDog Programming Guide 74

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

PREFACE

Copyright

This publication, including all photographs, illustrations and software, is protected under international copyright laws, with all rights reserved. No part of this manual may be reproduced, copied, translated or transmitted in any form or by any means without the prior written consent from EXOR International S.p.A.

Disclaimer

The information in this document is subject to change without prior notice and does not represent commitment from EXOR International S.p.A. However, users may update their knowledge of any product in use by constantly checking its manual posted on our website: http://www.exorint.net. EXOR shall not be liable for direct, indirect, special, incidental, or consequential damages arising out of the use of any product, nor for any infringements upon the rights of third parties, which may result from such use. Any implied warranties of merchantability or fitness for any particular purpose is also disclaimed.

Acknowledgements

eCC2100/2110 Series is a trademark of EXOR International S.p.A. All other product names mentioned herein are registered trademarks of their respective owners.

Regulatory Compliance Statements

This section describes how to keep the system CE compliant.

Declaration of Conformity

CE

The product(s) described in this manual complies with all applicable European Union (CE) directives if it has a CE marking. For computer systems to remain CE compliant, only CE-compliant parts may be used. Maintaining CE compliance also requires proper cable and cabling techniques.

RoHS Compliance

EXOR RoHS Environmental Policy and Status Update

EXOR is a global citizen for building the digital infrastructure. We are committed to providing green products and services, which are compliant with European Union RoHS (Restriction on Use of Hazardous Substance in Electronic Equipment) directive 2002/95/EU, to be your trusted green partner and to protect our environment.

RoHS restricts the use of Lead (Pb) < 0.1% or 1,000ppm, Mercury (Hg) < 0.1% or 1,000ppm, Cadmium (Cd) < 0.01% or 100ppm, Hexavalent Chromium (Cr6+) < 0.1% or 1,000ppm, Polybrominated biphenyls (PBB) < 0.1% or 1,000ppm, and Polybrominated diphenyl Ethers (PBDE) < 0.1% or 1,000ppm.

In order to meet the RoHS compliant directives, EXOR has established an engineering and manufacturing task force in to implement the introduction of green products. The task force will ensure that we follow the standard EXOR development procedure and that all the new RoHS components and new manufacturing processes maintain the highest industry quality levels for which EXOR are renowned.

The model selection criteria will be based on market demand. Vendors and suppliers will ensure that all designed components will be RoHS compliant.

How to recognize EXOR RoHS Products?

All new product models launched after January 2006 will be RoHS compliant. They will use the usual EXOR naming convention.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Warranty and RMA

EXOR Warranty Period

EXOR manufactures products that are new or equivalent to new in accordance with industry standard. EXOR warrants that products will be free from defect in material and workmanship for 2 years, beginning on the date of invoice by EXOR. HCP series products (Blade Server) which are manufactured by EXOR are covered by a three year warranty period.

EXOR Return Merchandise Authorization (RMA)

- Customers shall enclose the "EXOR RMA Service Form" with the returned packages.
- Customers must collect all the information about the problems encountered and note anything abnormal or, print out any on-screen messages, and describe the problems on the "EXOR RMA Service Form" for the RMA number apply process.
- Customers can send back the faulty products with or without accessories (manuals, cable, etc.) and any components from the card, such as CPU and RAM. If the components were suspected as part of the problems, please note clearly which components are included. Otherwise, EXOR is not responsible for the devices/parts.
- Customers are responsible for the safe packaging of defective products, making sure it is durable enough to be resistant against further damage and deterioration during transportation. In case of damages occurred during transportation, the repair is treated as "Out of Warranty."
- Any products returned by EXOR to other locations besides the customers' site will bear an extra charge and will be billed to the customer.

Repair Service Charges for Out-of-Warranty Products

EXOR will charge for out-of-warranty products in two categories, one is basic diagnostic fee and another is component (product) fee.

System Level

- Component fee: EXOR will only charge for main components such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistor, capacitor.
- Items will be replaced with EXOR products if the original one cannot be repaired. Ex: motherboard, power supply, etc.
- Replace with 3rd party products if needed.
- If RMA goods can not be repaired, EXOR will return it to the customer without any charge.

Board Level

- Component fee: EXOR will only charge for main components, such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistors, capacitors.
- If RMA goods can not be repaired, EXOR will return it to the customer without any charge.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Warnings

Read and adhere to all warnings, cautions, and notices in this guide and the documentation supplied with the chassis, power supply, and accessory modules. If the instructions for the chassis and power supply are inconsistent with these instructions or the instructions for accessory modules, contact the supplier to find out how you can ensure that your computer meets safety and regulatory requirements.

Cautions

Electrostatic discharge (ESD) can damage system components. Do the described procedures only at an ESD workstation. If no such station is available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the computer chassis.

Safety Information

Before installing and using the device, note the following precautions:

- Read all instructions carefully.
- Do not place the unit on an unstable surface, cart, or stand.
- Follow all warnings and cautions in this manual.
- When replacing parts, ensure that your service technician uses parts specified by the manufacturer.
- Avoid using the system near water, in direct sunlight, or near a heating device.
- The load of the system unit does not solely rely for support from the rackmounts located on the sides. Firm support from the bottom is highly necessary in order to provide balance stability.
- The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Installation Recommendations

Ensure you have a stable, clean working environment. Dust and dirt can get into components and cause a malfunction. Use containers to keep small components separated.

Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:

- A Philips screwdriver
- A flat-tipped screwdriver
- A grounding strap
- An anti-static pad

Using your fingers can disconnect most of the connections. It is recommended that you do not use needlenose pliers to disconnect connections as these can damage the soft metal or plastic parts of the connectors.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Safety Precautions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a stable surface during installation. Dropping it or letting it fall may cause damage.
7. Do not leave this equipment in either an unconditioned environment or in a above 40°C storage temperature as this may damage the equipment.
8. The openings on the enclosure are for air convection to protect the equipment from overheating. DO NOT COVER THE OPENINGS.
9. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
10. Place the power cord in a way so that people will not step on it. Do not place anything on top of the power cord. Use a power cord that has been approved for use with the product and that it matches the voltage and current marked on the product's electrical range label. The voltage and current rating of the cord must be greater than the voltage and current rating marked on the product.
11. All cautions and warnings on the equipment should be noted.
12. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
13. Never pour any liquid into an opening. This may cause fire or electrical shock.
14. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
15. If one of the following situations arises, get the equipment checked by service personnel:

    a. The power cord or plug is damaged.

    b. Liquid has penetrated into the equipment.

    c. The equipment has been exposed to moisture.

    d. The equipment does not work well, or you cannot get it to work according to the user's manual.

    e. The equipment has been dropped and damaged.

    f. The equipment has obvious signs of breakage.
16. Do not place heavy objects on the equipment.
17. The unit uses a three-wire ground cable which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this kind of plug, contact your electrician to replace your obsolete outlet.
18. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
19. The computer is provided with CD drives that comply with the appropriate safety standards including IEC 60825.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Technical Support and Assistance

1. For the most updated information of EXOR products, visit EXOR's web-site at www.exorint.net.

2. For technical issues that require contacting our technical support team or sales representative, please have the following information ready before calling:
   - Product name and serial number
   - Detailed information of the peripheral devices
   - Detailed information of the installed software (operating system, version, application software, etc.)
   - A complete description of the problem
   - The exact wordings of the error messages

Warning!

1. Handling the unit: carry the unit with both hands and handle it with care.
2. Maintenance: to keep the unit clean, use only approved cleaning products or clean with a dry cloth.
3. CompactFlash: Turn off the unit's power before inserting or removing a CompactFlash storage card.

Conventions Used in this Manual

Warning: Information about certain situations, which if not observed, can cause personal injury. This will prevent injury to yourself when performing a task.

Caution: Information to avoid damaging components or losing data.

Note: Provides additional information to complete a task easily.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Package Contents

Before continuing, verify that the eCC2100/2110 Series package that you received is complete. Your package should have all the items listed in the following table.

Item	Description	Qty
1	FLAT HEAD SCREW LONG FEI:F3x5ISO+NYLOK NIGP	4
2	TERMINAL BLOCKS 3P PHOENIX CONTACT:1803581	1
3	TERMINAL BLOCKS 2P PHOENIX CONTACT:1777989	1

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Ordering Information

The following provides ordering information for eCC2100/2110 Series.

- **Barebone**
  eCC2100 (P/N: 70ECC2100)
  - Intel® Atom™ D525 fanless barebone system with DDR3 SODIMM socket and optional wireless module support (either WiFi or mobile wireless)

- **Barebone**
  eCC2100A (P/N: 70ECC2100A)
  - Intel® Atom™ D525 fanless barebone system with DDR3 SODIMM socket and optional wireless module support (either WiFi or mobile wireless)

- **Barebone**
  eCC2110 (P/N: 70ECC2110)
  - Intel® Atom™ D525 fanless barebone system with DDR3 SODIMM socket, one PCI expansion, and optional wireless module support (either WiFi or mobile wireless)

- **Barebone**
  eCC2110A (P/N: 70ECC2110A)
  - Intel® Atom™ D525 fanless barebone system with DDR3 SODIMM socket, one PCI expansion, and optional wireless module support (either WiFi or mobile wireless)

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Chapter 1: Product Introduction

Overview

eCC2100/2100A

Front

Rear: eCC2100

Rear: eCC2100A

Key Features

- Onboard Intel® Atom™ Dual Core D525 (1.8GHz, 1M cache) processor
- One DDR3 SODIMM socket, DDR3 800, maximum of 2GB memory module
- 3 x Intel® 1000/100/10 Mbps LAN ports (eCC2100)
  2 x Intel® 1000/100/10 Mbps LAN ports (eCC2100A)
- 4 x USB 2.0
- 1 x VGA
- 1 x DB15 GPIO connector
- 4 x RS232 and 2 x RS232/422/485 with auto flow control
- One external CF socket
- One external SIM card holder
- 9 ~ 36V DC input
- ATX power mode

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

eCC2110/2110A

Front

Rear: eCC2110

Rear: eCC2110A

Key Features

- Onboard Intel® Atom™ Dual Core D525 (1.8GHz, 1M cache) processor
- One DDR3 SODIMM socket, DDR3 800, maximum of 2GB memory module
- 3 x Intel® 1000/100/10 Mbps LAN ports (eCC2110)
  2 x Intel® 1000/100/10 Mbps LAN ports (eCC2110A)
- 4 x USB 2.0
- 1 x VGA
- 1 x DB15 GPIO connector
- 4 x RS232 and 2 x RS232/422/485 with auto flow control
- One external CF socket
- One external SIM card holder
- 9 ~ 36V DC input
- ATX power mode
- 1 x PCI Expansion Slot

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Hardware Specifications

Main Board
- NISB2100 (eCC2100/2110)
  NISB 2100A (eCC2100A/2110A)
- Onboard Intel® Atom™ D525 dual core processor, 1.8GHz, 1M cache
- Intel® ICH8M PCH

Main Memory
- One DDR3 SODIMM socket
- Supports up to 2GB DDR3 800 SDRAM memory module, unbuffered, non-ECC

Expansion
- eCC2100/2100A
  - One Mini-PCIe socket (for optional WiFi or mobile wireless module)
- eCC2110/2110A
  - 1 x PCI expansion
  - One Mini-PCIe socket (for optional WiFi or mobile wireless module)

I/O Interface - Front
- ATX Power on/off switch
- HDD access / Power status LEDs
- 1 x DB15 GPIO connector
- 2 x Serial ports (RS232)
- 2 x USB 2.0 ports
- 1 x CompactFlash socket
- 1 x external SIM card holder
- 2 x antenna holes (for optional WiFi or mobile wireless module)

I/O Interface - Rear
- 9~36V DC input
- 1 x 3-pin connector for remote power on/off switch
- 1 x DB15 VGA port
- 1 x speaker-out jack
- 3 x Intel® GbE LAN ports (eCC2100/2110)
  2 x Intel® GbE LAN ports (eCC2100A/2110A)
- 2 x USB 2.0 ports
- 4 x Serial ports (2x RS232 and 2x RS232/422/485 with auto-flow control: isolation protection on COM1 and COM2)

Storage
- 1 x 2.5" SATA HDD drive bay (eCC2100/2100A)
  1 x 2.5" SATA HDD drive bay or optional SATA DOM module - horizontal type (eCC2110/2110A)
- 1 x external CF socket

Power Requirements
- ATX Power mode
- DC to DC power design onboard, supports 9~36V DC
- Optional 19V, 65W power adapter

Dimensions
- eCC2100/2100A
  195mm (W) x 200mm (D) x 65mm (H) (7.7" x 7.9" x 2.6")
- eCC2110/2110A
  195mm (W) x 200mm (D) x 90mm (H) (7.7" x 7.9" x 3.5")

Construction
- Aluminum chassis with fanless design

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Environment

- Operating temperature - ambient with airflow:
  -5°C to 55°C (eCC2100/2110)
  -20°C to 70°C with industrial grade devices (eCC2100A/2110A)
  (According to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14)
- Storage temperature: -20°C to 80°C
- Relative humidity: 10% to 93% (Non-Condensing)

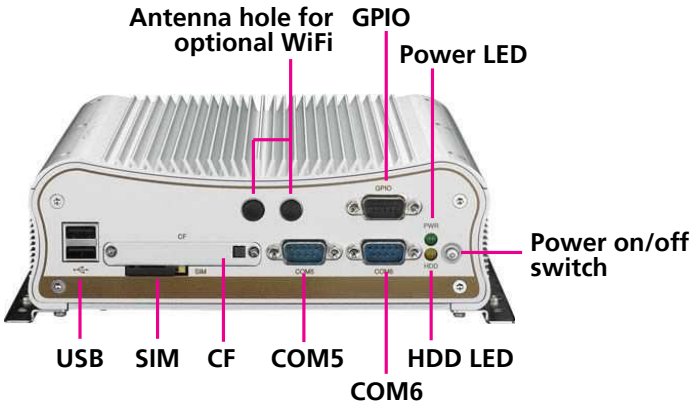
Certifications

- CE approval

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Getting to Know eCC2100/2110 Series

eCC2100/2100A - Front Panel



USB
Used to connect USB 2.0/1.1 devices.

CF
Used to insert a CompactFlash card.

SIM
Used to insert a SIM card.

Antenna Hole for Optional WiFi
Used to connect an optional Mini-PCIe WiFi module.

COM5 and COM6
Used to connect RS232 compatible serial devices.

GPIO
The GPIO connector supports 4 digital input and 4 digital output.

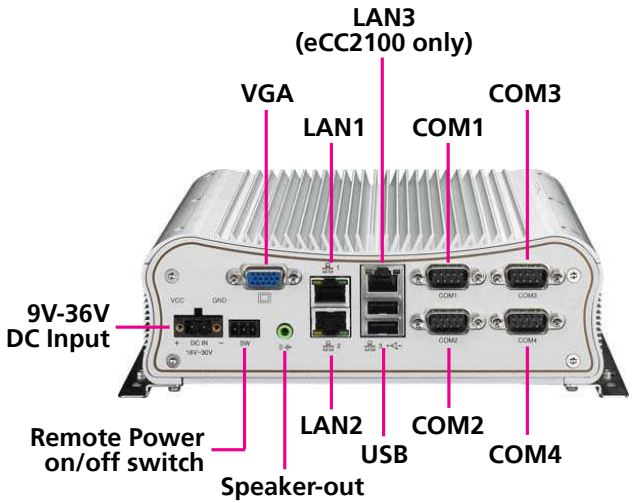
Power LED
Indicates the power status of the system.

HDD LED
Indicates the status of the hard drive.

Power On/Off Switch
Press to power-on or power-off the system.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

eCC2100/2100A - Rear Panel



9V-36V DC Input
Used to plug a DC power cord.

Output for Remote Power On/Off Switch
Used to connect a remote to power on/off the system.

VGA
Used to connect an analog VGA monitor.

Speaker-out
Used to connect a headphone or a speaker.

LAN
Used to connect the system to a local area network.
eCC2100: LAN1 to LAN3
eCC2100A: LAN1 and LAN2 only.

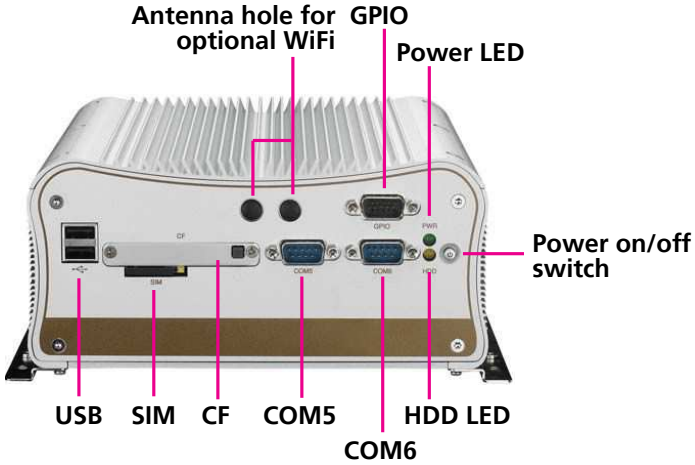
USB
Used to connect USB 2.0/1.1 devices.

COM1 and COM2
Used to connect RS232/422/485 compatible serial devices.

COM3 and COM4
Used to connect RS232 compatible serial devices.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

eCC2110/2110A - Front Panel



USB
Used to connect USB 2.0/1.1 devices.

CF
Used to insert a CompactFlash card.

SIM
Used to insert a SIM card.

Antenna Hole for Optional WiFi
Used to connect an optional Mini-PCIe WiFi module.

COM5 and COM6
Used to connect RS232 compatible serial devices.

GPIO
The GPIO connector supports 4 digital input and 4 digital output.

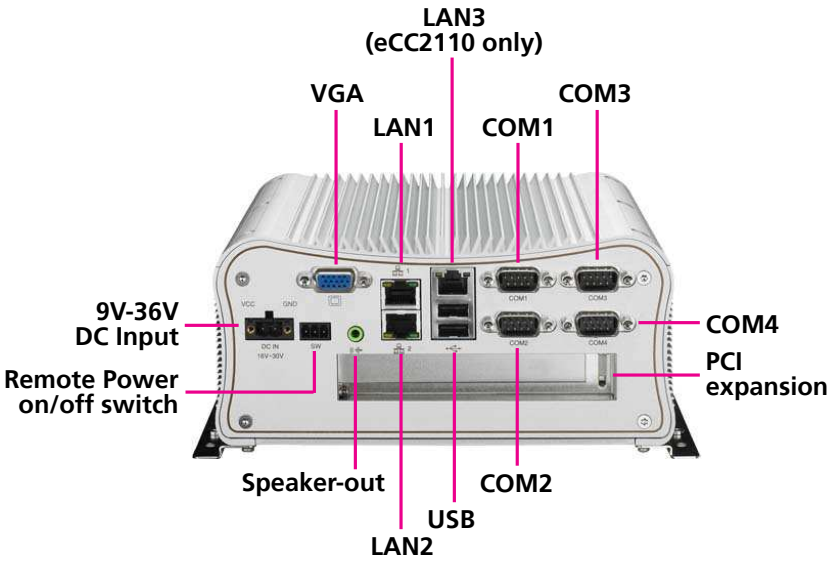
Power LED
Indicates the power status of the system.

HDD LED
Indicates the status of the hard drive.

Power On/Off Switch
Press to power-on or power-off the system.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

eCC2110/2110A - Rear Panel



9V-36V DC Input
Used to plug a DC power cord.

Output for Remote Power On/Off Switch
Used to connect a remote to power on/off the system.

VGA
Used to connect an analog VGA monitor.

Speaker-out
Used to connect a headphone or a speaker.

USB
Used to connect USB 2.0/1.1 devices.

LAN
Used to connect the system to a local area network.
eCC2110: LAN1 to LAN3
eCC2110A: LAN1 and LAN2 only.

COM1 and COM2
Used to connect RS232/422/485 compatible serial devices.

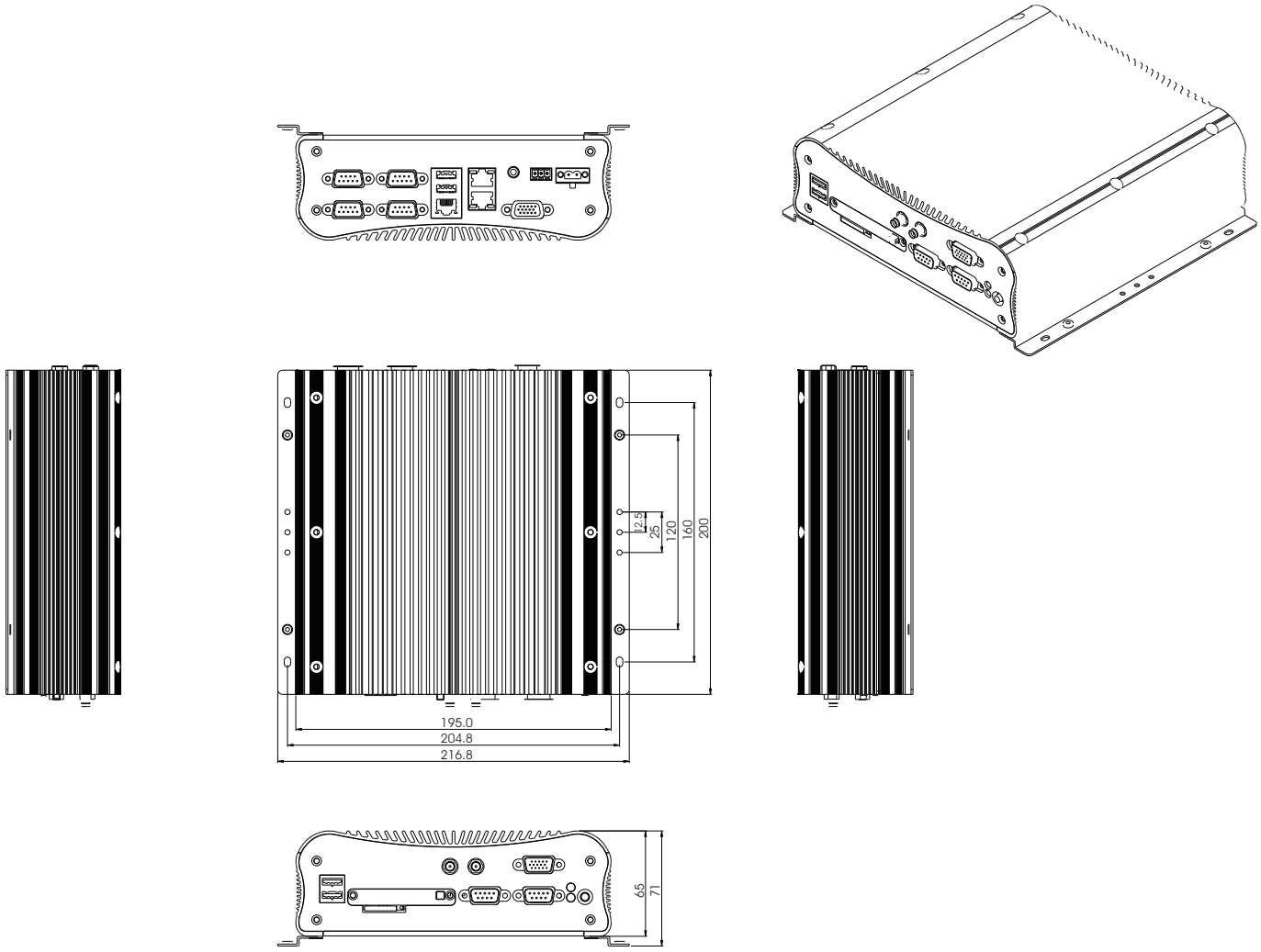
COM3 and COM4
Used to connect RS232 compatible serial devices.

PCI Expansion
Used to connect a PCI expansion card.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

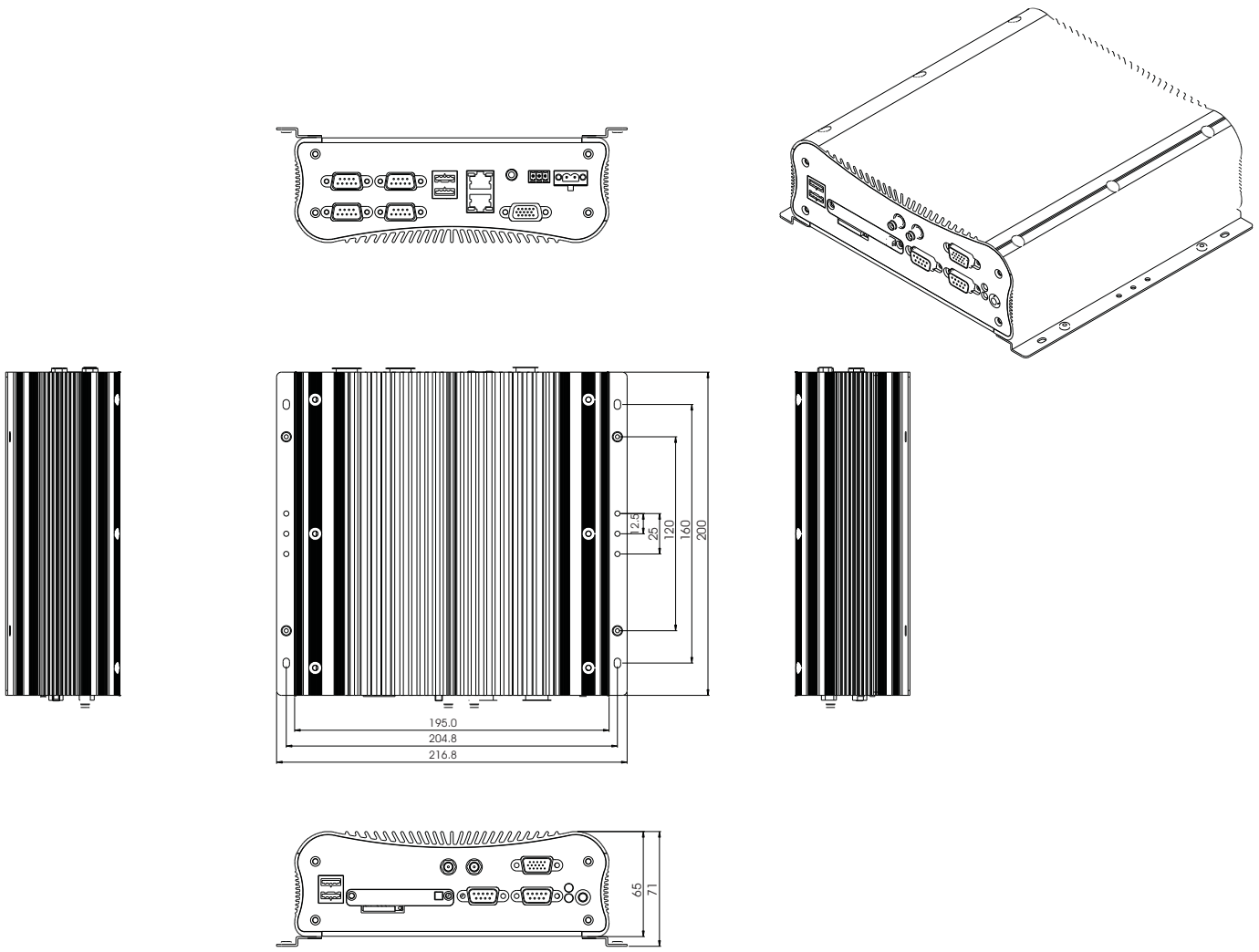
Mechanical Dimensions

eCC2100



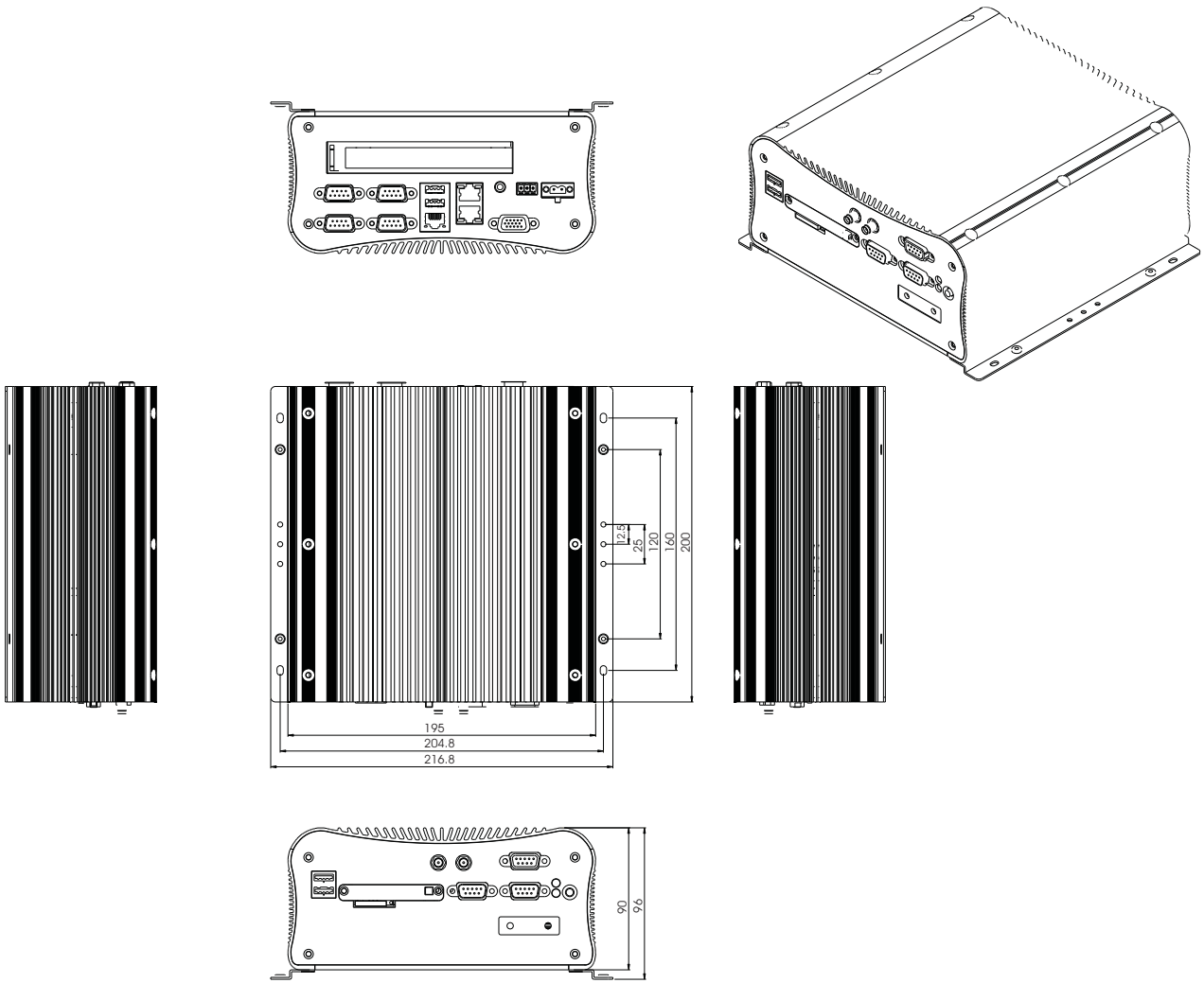
Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

eCC2100A



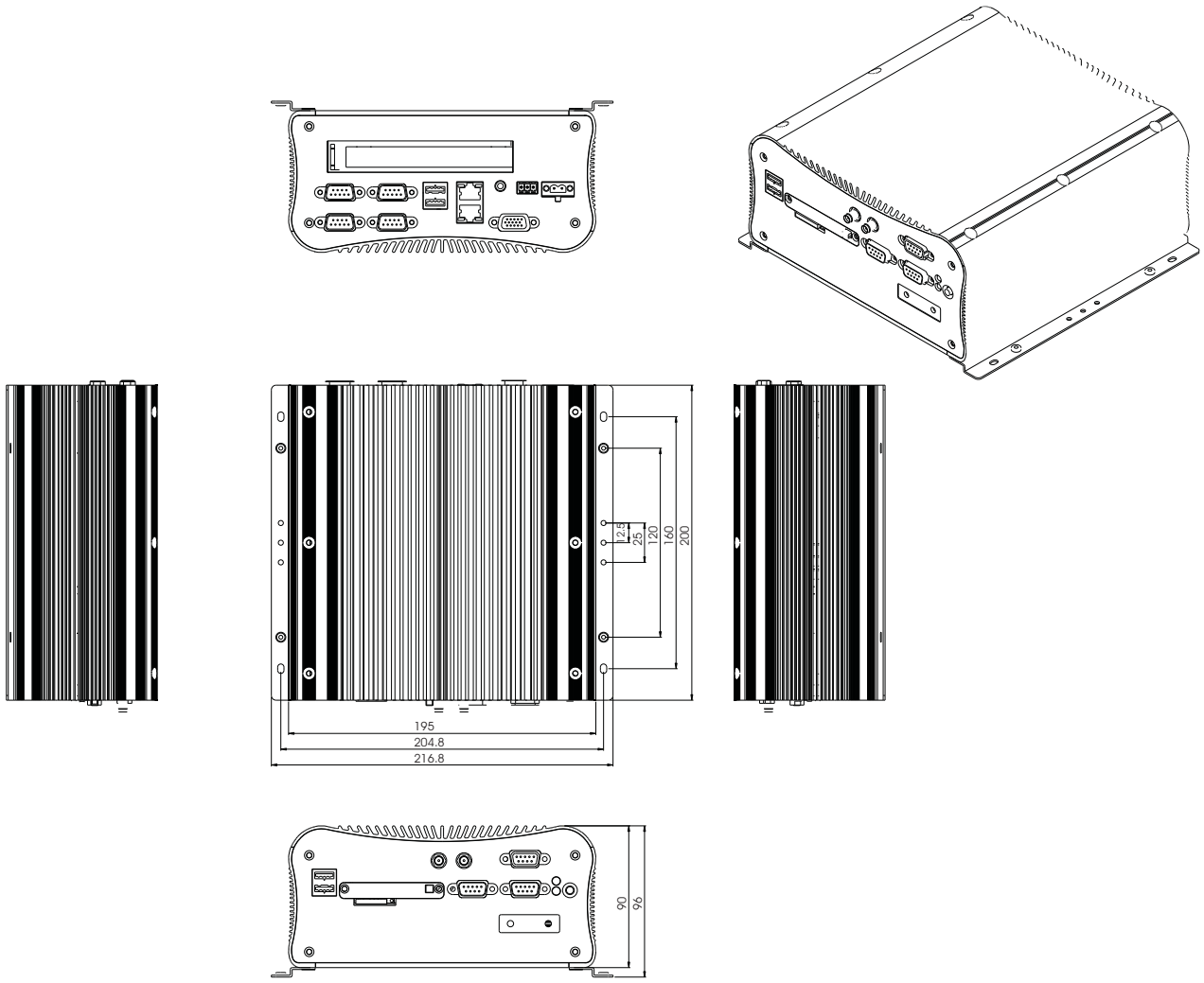
Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

eCC2110



Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

eCC2110A



Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Chapter 2: Jumpers and Connectors

This chapter describes the jumpers and connectors on the motherboard. Note that the following procedures are generic for all NISE 2100/2110 series.

Before You Begin

- Ensure you have a stable, clean working environment. Dust and dirt can get into components and cause a malfunction. Use containers to keep small components separated.
- Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:
  - A Philips screwdriver
  - A flat-tipped screwdriver
  - A set of jewelers Screwdrivers
  - A grounding strap
  - An anti-static pad
- Using your fingers can disconnect most of the connections. It is recommended that you do not use needle-nosed pliers to disconnect connections as these can damage the soft metal or plastic parts of the connectors.
- Before working on internal components, make sure that the power is off. Ground yourself before touching any internal components, by touching a metal object. Static electricity can damage many of the electronic components. Humid environment tend to have less static electricity than dry environments. A grounding strap is warranted whenever danger of static electricity exists.

Precautions

Computer components and electronic circuit boards can be damaged by discharges of static electricity. Working on the computers that are still connected to a power supply can be extremely dangerous.

Follow the guidelines below to avoid damage to your computer or yourself:

- Always disconnect the unit from the power outlet whenever you are working inside the case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Don't flex or stress the circuit board.
- Leave all components inside the static-proof packaging that they shipped with until they are ready for installation.
- Use correct screws and do not over tighten screws.

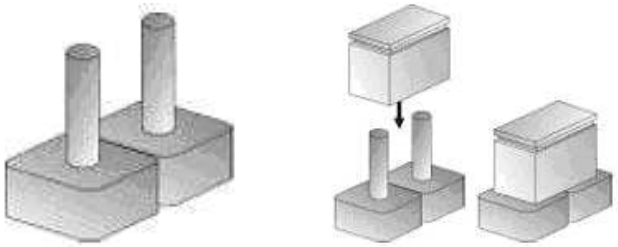
Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Jumper Settings

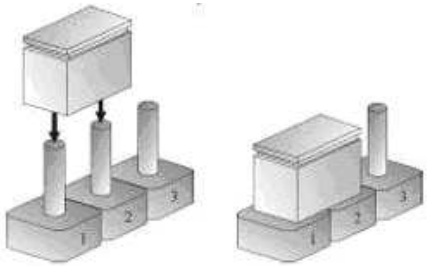
A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is **short**. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is **open**.

Refer to the illustrations below for examples of what the 2-pin and 3-pin jumpers look like when they are short (on) and open (off).

Two-Pin Jumpers: Open (Left) and Short (Right)



Three-Pin Jumpers: Pins 1 and 2 Are Short

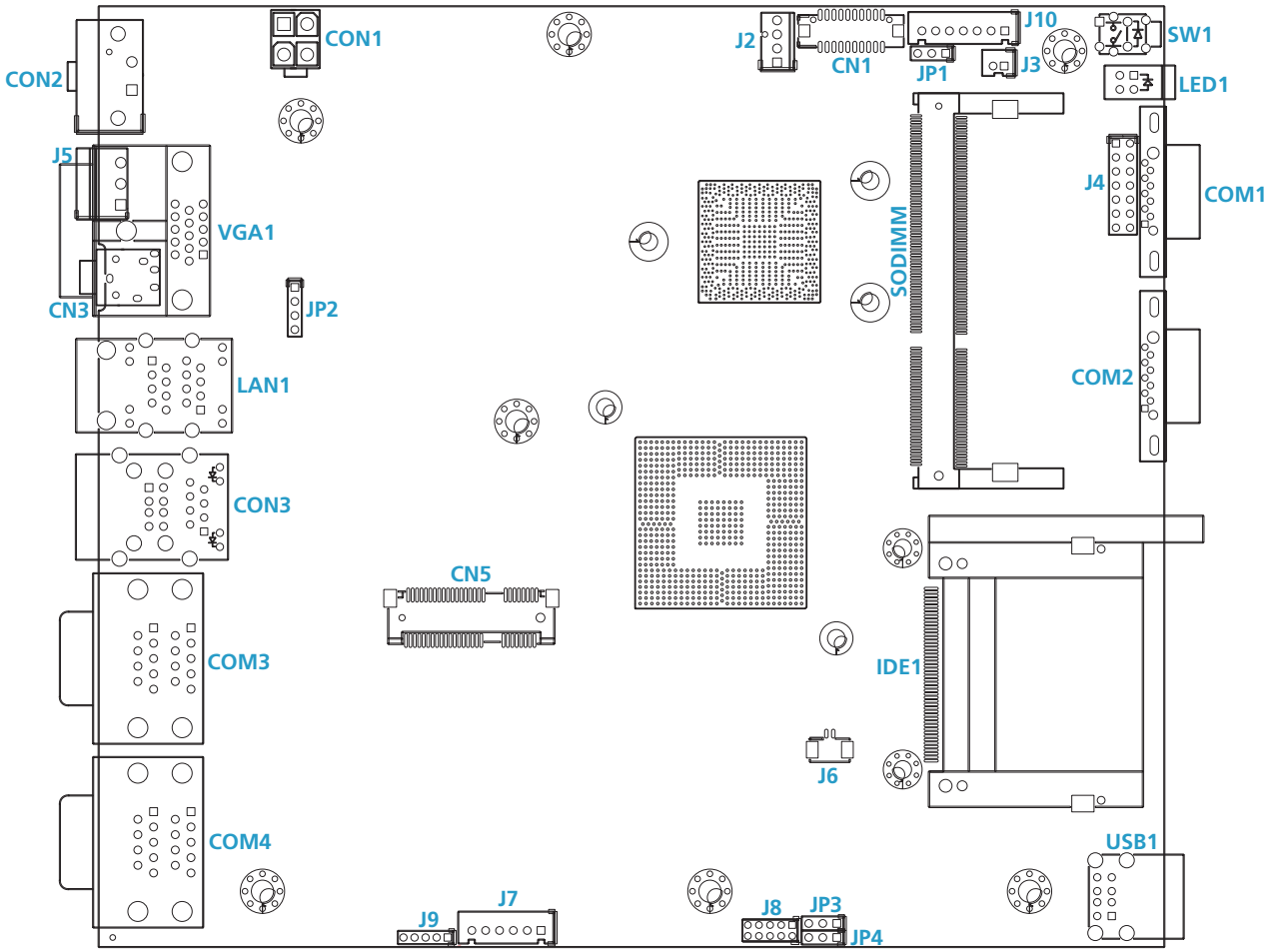


Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Locations of the Jumpers and Connectors

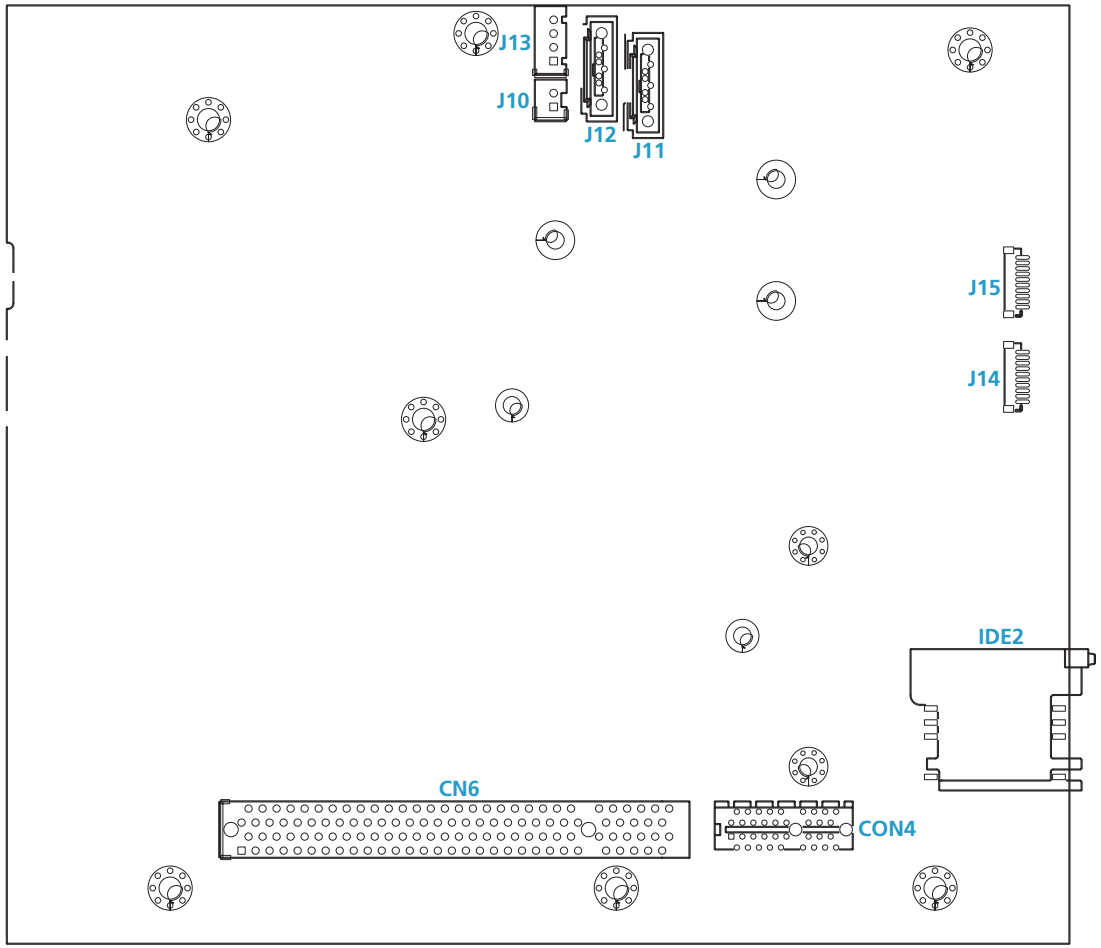
eCC2100

The figure below is the top view of the NISB 2100 main board which is the main board used in the eCC2100 Series system. It shows the locations of the jumpers and connectors.



Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

The figure below is the bottom view of the NISB 2100 main board.



Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Jumpers

Clear CMOS

Connector size: 1x3 3-pin header, 2.54 mm pitch
Connector location: JP3

Pin	Settings
1-2 On	Normal
2-3 On	CMOS Clear

1-2 On: default

Pin	Definition
1	NC
2	IRTCRST#
3	GND

COM3 RS232 RI Pin Power Select

Connector type: 1x5 5-pin header 2.54mm -M-180
Connector location: J9

Pin	Settings
1-2	+5V
2-3	+12V
4-5	RING

4-5 On: default

Pin	Definition
1	VCC5
2	RING_T
3	+12V
4	RING_T
5	RING

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Panel CCFL LVDS Backlight Power Select

Connector size: 1x3 3-pin header, 2.54 mm pitch
Connector location: JP1

Pin	Settings
1	VCC3 (3.3V)
2	VCC_LCD
3	VCC5(+5V)

1-2 On: default

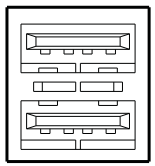
Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Connector Pin Definitions

External I/O Interface - Front Panel

USB Ports

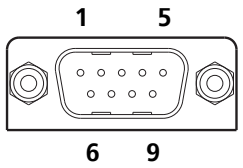
Connector type: Dual USB port
Connector location: USB1



Pin	Definition	Pin	Definition
1	USB_VCC(5V)	5	USB_VCC(5V)
2	DATA_N	6	DATA_N
3	DATA_P	7	DATA_P
4	GND	8	GND

COM5 Serial Port

Connector type: DB-9 port
Connector location: COM2

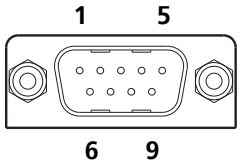


Pin	Definition	Pin	Definition
1	COM5_DCD	6	COM5_DSR
2	COM5_RXD	7	COM5_RTS
3	COM5_TXD	8	COM5_CTS
4	COM5_DTR	9	COM5_RI
5	GND		

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

COM6 Serial Port

Connector type: DB-9 port
Connector location: COM1

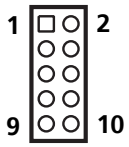


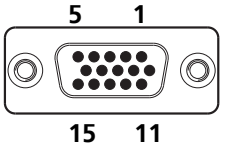
Pin	Definition	Pin	Definition
1	COM6_DCD	6	COM6_DSR
2	COM6_RXD	7	COM6_RTS
3	COM6_TXD	8	COM6_CTS
4	COM6_DTR	9	COM6_RI
5	GND		

GPIO Connector

(4 digital input and 4 digital output)

Connector type: DB-15 port, 2x5 10-pin header, 2.0 mm-M-180
Connector location: J8





Pin	Definition	Pin	Definition
1	+5V	2	GND
3	GPO	4	GPI
5	GPO	6	GPI
7	GPO	8	GPI
9	GPO	10	GPI

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Status Indicators

PWR

HDD

Status	LED Color
PWR	Green
HDD	Yellow

ATX Power On/Off Switch

Connector location: SW1

Pin	Definition
On	Blue light
Off	Red light

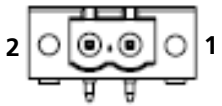
Pin	Definition	Pin	Definition
1	GND	2	PBT_PU
3	PBT_PU	4	GND
A1	PWRLED_N	C1	PWRLED_P

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

External I/O Interface - Rear Panel

9-36V DC Input

Connector type: 2P Phoenix Contact 5.08mm Power Connector
Connector location: CON2



Pin	Definition
1	GND
2	VIN(9~36V)

Remote Power On/Off Switch

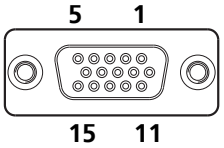
Connector type: 3-pin switch
Connector location: J5

Pin	Definition
1	GND
2	PWR_ON
3	PS_ON

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

VGA Port

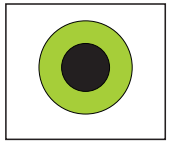
Connector type: DB-15 port, 15-pin D-Sub
Connector location: VGA1



Pin	Definition	Pin	Definition
1	RED_VGA	9	VGA_VCC(5V)
2	GREEN_VGA	10	GND
3	BLUE_VGA	11	NC
4	NC	12	DDCDATA_VGA
5	GND	13	HSYNC_VGA
6	VGADET	14	VSYNC_VGA
7	GND	15	DDCCLK_VGA
8	GND		

Speaker-out Jack

Connector type: 6-pin jack
Connector location: CN3

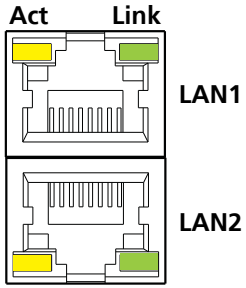


Pin	Definition
1	Speak Out - R
2	Speak Out - JD
3	NC
4	Speak Out - L
5	GND
6	GND

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

LAN1 and LAN2 Ports

Connector type: RJ45 port with LEDs
Connector location: LAN1



Act	Status
Yellow Blinking	Data Activity
Off	No Acitivity

Link	Status
Green Always Lighted	Linked
Off	No Link

LAN1

Pin	Definition	Pin	Definition
B1	LAN1M0P	B7	LAN1M3P
B2	LAN1M0N	B8	LAN1M3N
B3	LAN1M1P	B9	LAN1LINK
B4	LAN1M2P	B10	LAN1ACTP
B5	LAN1M2N	B11	LAN1ACT#
B6	LAN1M1N	B12	LAN1LINKP

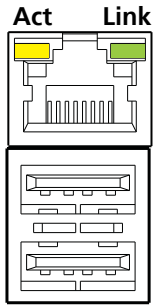
LAN2

Pin	Definition	Pin	Definition
A1	LAN2M0P	A7	LAN2M3P
A2	LAN2M0N	A8	LAN2M3N
A3	LAN2M1P	A9	LAN2LINK
A4	LAN2M2P	A10	LAN2ACTP
A5	LAN2M2N	A11	LAN2ACT#
A6	LAN2M1N	A12	LAN2LINKP

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

LAN3 (eCC2100/2110 only) and Dual USB Ports

Connector size: RJ45 and Dual USB
Connector location: CON3



USB

Pin	Definition	Pin	Definition
1	USB_VCC(5V)	5	USB_VCC(5V)
2	DATA_N	6	DATA_N
3	DATA_P	7	DATA_P
4	GND	8	GND
23	GND	22	GND
27	GND	28	GND

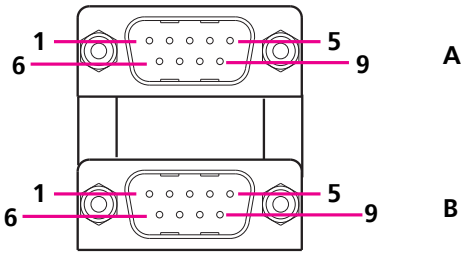
LAN3

Pin	Definition	Pin	Definition
9	LAN3M0P	17	LAN3ACTP
10	LAN3M0N	18	LAN3_LEDACT#
11	LAN3M1P	19	LAN3LINKP
12	LAN3M2P	20	LAN3_LEDLINK
13	LAN3M2N	21	GND
14	LAN3M1N	24	GND
15	LAN3M3P	25	GND
16	LAN3M3N	28	GND

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

COM1 and COM2 Ports

Connector size: DB-9 port
Connector location: COM3



COM1A

Pin	Definition	Pin	Definition
1	COM1_DCD	6	COM1_DSR
2	COM1_RXD	7	COM1_RTS
3	COM1_TXD	8	COM1_CTS
4	COM1_DTR	9	COM1_RI
5	GND		

COM2B

Pin	Definition	Pin	Definition
1	COM2_DCD	6	COM2_DSR
2	COM2_RXD	7	COM2_RTS
3	COM2_TXD	8	COM2_CTS
4	COM2_DTR	9	COM2_RI
5	GND		

RS485

Pin	Definition	Pin	Definition
1	TXD-	6	Reserved
2	TXD+	7	Reserved
3	Reserved	8	Reserved
4	Reserved	9	Reserved
5	Reserved		

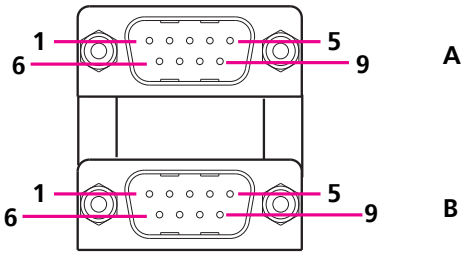
RS422

Pin	Definition	Pin	Definition
1	TXD-	6	RTS-
2	TXD+	7	RTS+
3	RXD+	8	CTS+
4	RXD-	9	CTS-
5	GND		

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

COM3 and COM4 Ports

Connector size: DB-9 port
Connector location: COM4



COM3A

Pin	Definition	Pin	Definition
1	COM3_DCD	6	COM3_DSR
2	COM3_RXD	7	COM3_RTS
3	COM3_TXD	8	COM3_CTS
4	COM3_DTR	9	COM3_RI
5	GND		

COM4B

Pin	Definition	Pin	Definition
1	COM4_DCD	6	COM4_DSR
2	COM4_RXD	7	COM4_RTS
3	COM4_TXD	8	COM4_CTS
4	COM4_DTR	9	COM4_RI
5	GND		

USB 8-9 Connector

Connector size: 1x6 6-pin JST wafer, 2.5 mm pitch
Connector location: J7

Pin	Definition
1	USB_VCC45
2	USB_8N
3	USB_8P
4	USB_9N
5	USB_9P
6	USB_GND

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Internal Connectors

COM5 Connector

Connector type: 2x5 10-pin boxed header, 1.0mm
Connector location: J14

Pin	Definition	Pin	Definition
1	SIO_DCD#5	2	SIO_RXD5
3	SIO_TXD5	4	SIO_DTR#5
5	IO_GND	6	SIO_DSR#5
7	SIO_RTS#5	8	SIO_CTS#5
9	SIO_RI#5	10	IO_GND

COM6 Connector

Connector type: 2x5 10-pin boxed header, 1.0mm
Connector location: J15

Pin	Definition	Pin	Definition
1	SIO_DCD#6	2	SIO_RXD6
3	SIO_TXD6	4	SIO_DTR#6
5	IO_GND	6	SIO_DSR#6
7	SIO_RTS#6	8	SIO_CTS#6
9	SIO_RI#6	10	IO_GND

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

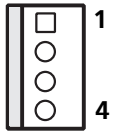
Remote Power On/Off Switch

Connector type: 1x2 2-pin header, JST 2.0mm
Connector location: J3

Pin	Definition
1	PSON#
2	GND

CPU Fan Connector

Connector type: 1x4, 4-pin Wafer, 2.54mm-M-180
Connector location: J2

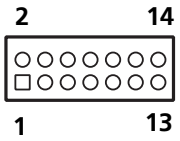


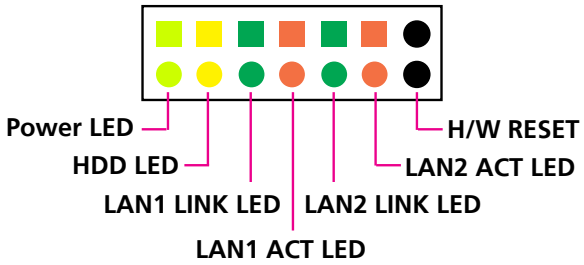
Pin	Definition
1	GND
2	VCC_12
3	CPU1_FAN_SPEED
4	CPU1_FANPWM

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Internal Power/HDD/LAN Power/LAN Active LED (RTC Connector)

Connector type: 2x7 14-pin header 2.54mm-M-180
Connector location: J4





Pin	Description	Pin	Description
1	POWER_OK	2	VCC_LEDPOWER
3	HDD_LED#	4	HDD_LEDPOWER
5	LAN1_LINK#	6	LAN1LINK_LEDPOWER
7	LAN1_ACT#	8	LAN1ACT_LEDPOWER
9	LAN2_LINK#	10	LAN2LINK_LEDPOWER
11	LAN2_ACT#	12	LAN2ACT_LEDPOWER
13	H/W RESET	14	GND

SMBus Pin Header

Connector type: 1x3 3-pin header 2.54mm-M-180
Connector location: JP4

Pin	Definition
1	SMbus_CLK
2	SMbus_data
3	GND

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

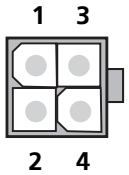
Mic-in Connector

Connector type: 1x4 4-pin header 2.54mm-M-180
Connector location: JP2

Pin	Definition
1	Mic-in L
2	Mic JD
3	GND
4	Mic-in R

Power Output Connector

Connector type: 2x2 4-pin AUX 3.5mm
Connector location: CON1

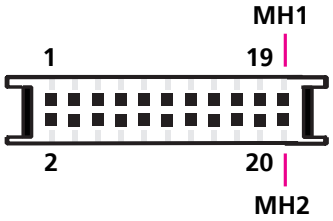


Pin	Definition
1	GND
2	GND
3	VIN Power
4	VIN Power

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

LVDS Connector

Connector type: 20-pin DF13-20DP 1.25mm
Connector location: CN1



Pin	Definition	Pin	Definition
1	LVDS_DDCCLK	2	LVDS_DDCDATA
3	VCC_LCD(5V Or3.3V)	4	LVDS_A0P
5	NC	6	LVDS_A0N
7	NC	8	VCC_LCD(5V Or3.3V)
9	GND	10	LVDS_A1P
11	LVDS_ACLKP	12	LVDS_A1N
13	LVDS_ACLKN	14	GND
15	GND	16	V_INV (12V)
17	LVDS_A2P	18	V_INV (12V)
19	LVDS_A2N	20	GND

Panel CCFL Connector

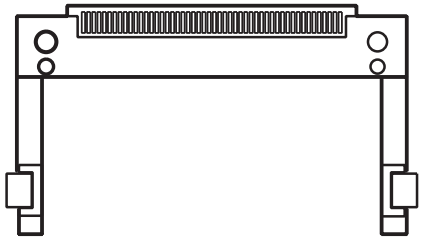
Connector type: 1x7 7-pin header JST-2.5mm-M-180
Connector location: J1

Pin	Definition
1	Vcc5
2	V_INV (12V)
3	V_INV (12V)
4	CCFLBKLTCTRL
5	GND
6	GND
7	M_BKLTEN

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

CompactFlash

Connector type: CompactFlash Type I/II H:6.3mm SMD
Connector location: IDE1



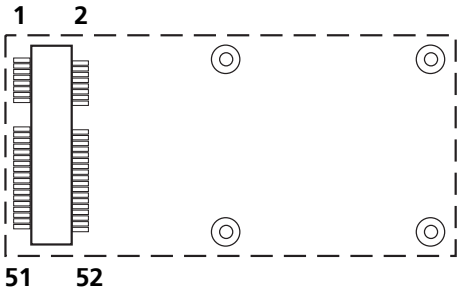
Pin	Description	Pin	Description
1	GND	2	SDD3A
3	SDD4A	4	SDD5A
5	SDD6A	6	SDD7A
7	SDCS#1	8	GND
9	GND	10	GND
11	GND	12	GND
13	VCC	14	GND
15	GND	16	GND
17	GND	18	SDA2A
19	SDA1A	20	SDA0A
21	SDD0A	22	SDD1A
23	SDD2A	24	NC
25	CF_CD2#	26	CF_CD1#
27	SDD11A	28	SDD12A

Pin	Description	Pin	Description
29	SDD13A	30	SDD14A
31	SDD15A	32	SDCS#3
33	NC	34	SDIOR#
35	SDIOW#	36	VCC
37	HDIRQ14	38	VCC
39	CF_SEL#	40	NC
41	IDERST#	42	SIORDY
43	SDREQ	44	SDDACK#
45	IDEACTP#	46	DIAG#
47	SDD8A	48	SDD9A
49	SDD10A	50	GND

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Mini-PCIe Slot

Connector location: CN5

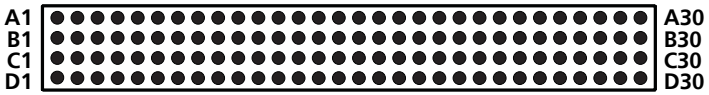


Pin	Definition	Pin	Definition
1	PCIE_WAKE#	2	+V3.3A_MINI
3	NC	4	GND
5	NC	6	+V1.5S_MINI
7	PCIE_MINI_CLKREQ#1	8	SIM_PWER
9	GND	10	SIM_DATA
11	CLK_N	12	SIM_CLK
13	CLK_P	14	SIM_REST
15	GND	16	SIM_VCCP
17	NC	18	GND
19	NC	20	MINICARD1_DIS#
21	GND	22	PCI_RST
23	PCIeRX_N	24	+V3.3A_MINI
25	PCIeRX_P	26	GND
27	GND	28	+V1.5S_MINI
29	GND	30	SMB_CLK
31	PCIeTX_N	32	SMB_DATA
33	PCIeTX_P	34	GND
35	GND	36	USB_DATA_N
37	GND	38	USB_DATA_P
39	+V3.3A_MINI	40	GND
41	+V3.3A_MINI	42	NC
43	GND	44	LED_WLAN_N
45	NC	46	NC
47	NC	48	+V1.5S_MINI
49	NC	50	GND
51	NC	52	+V3.3A_MINI
MH1	GND	MH2	GND
MH3	GND	MH4	GND
MH6	GND		

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

PCI Slot (Low Profile)

Connector type: 120-pin H:9.6mm 180D GOLD FLASH DIP 5V
Connector location: CN6



Definition					
Pin	**A**	**B**	**Pin**	**A**	**B**
1	TRST#	-12V	32	AD16	AD17
2	+12V	TCK	33	+3.3V	C/BE2#
3	TMS	GND	34	FRAME#	GND
4	TDI	TDO	35	GND	IRDY#
5	+5V	+5V	36	TRDY#	+3.3V
6	INTA#	+5V	37	GND	DEVSEL#
7	INTC#	INTB#	38	STOP#	GND
8	+5V	INTD#	39	+3.3V	LOCK#
9	RSV1	PRSNT1#	40	SMBCLK	PERR#
10	+5V	RSV5	41	SMBDAT	+3.3V
11	RSV2	PRSNT2#	42	GND	SERR#
12	GND	GND	43	PAR	+3.3V
13	GND	GND	44	AD15	C/BE1#
14	+3.3Vaux	RSV6	45	+3.3V	AD14
15	RST#	GRPIMD	46	AD13	GND
16	+5V	CLK	47	AD11	AD12
17	GNT#	GND	48	GND	AD10
18	GND	REQ#	49	AD9	GND
19	PME#	+5V	CONNECTOR KEY		
20	AD30	AD31			
21	+3.3V	AD29	52	C/BE0#	AD8
22	AD28	GND	53	+3.3V	AD7
23	AD26	AD27	54	AD6	+3.3V
24	GND	AD25	55	AD4	AD5
25	AD24	+3.3V	56	GND	AD3
26	IDSEL	C/BE3#	57	AD2	GND
27	+3.3V	AD23	58	AD0	AD1
28	AD22	GND	59	+5V	+5V
29	AD20	AD21	60	REQ64#	ACK64#
30	GND	AD19	61	+5V	+5V
31	AD18	+3.3V	62	+5V	+5V

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Chapter 3: System Setup

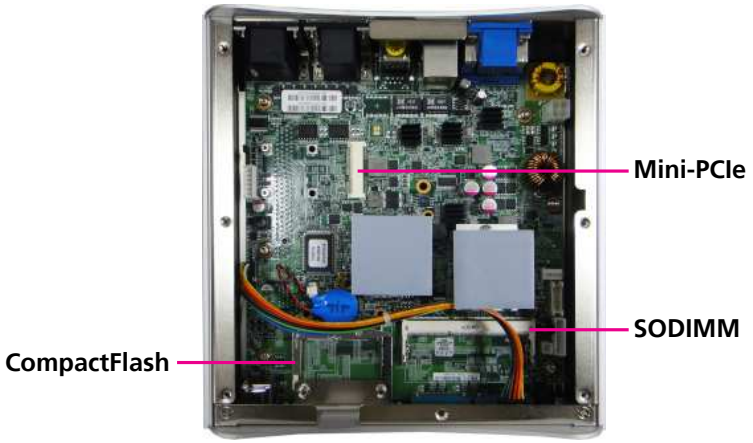
Removing the Chassis Cover

Prior to removing the chassis cover, make sure the unit's power is off and disconnected from the power sources to prevent electric shock or system damage.

1. The screws on the top cover are used to secure the cover to the chassis.
2. Remove these screws and then put them in a safe place for later use.

The dots denote the locations of the screws.

3. The SODIMM, Mini-PCIe and CompactFlash sockets are readily accessible upon removing the cover.

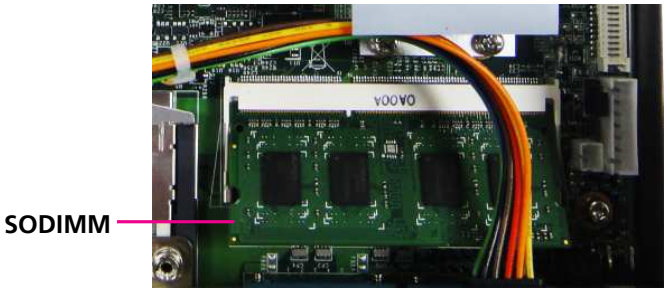


Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Installing a SODIMM

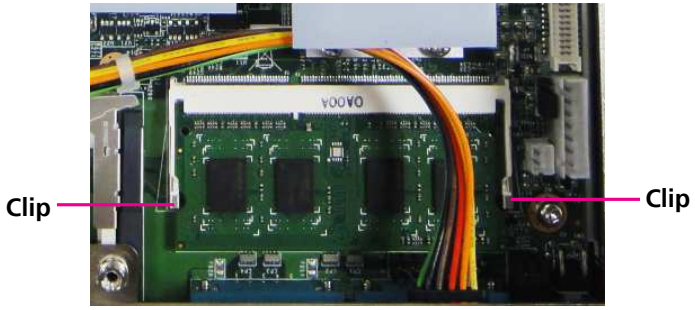
1. Locate the SODIMM socket on the board.

2. Insert the module into the socket at an approximately 30 degrees angle. Apply firm even pressure to each end of the module until it slips into the socket. The gold-plated connector on the edge of the module will almost completely disappear inside the socket.



Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

3. Push the module down until the clips on both sides of the socket lock into position. You will hear a distinctive “click”, indicating the module is correctly locked into position.

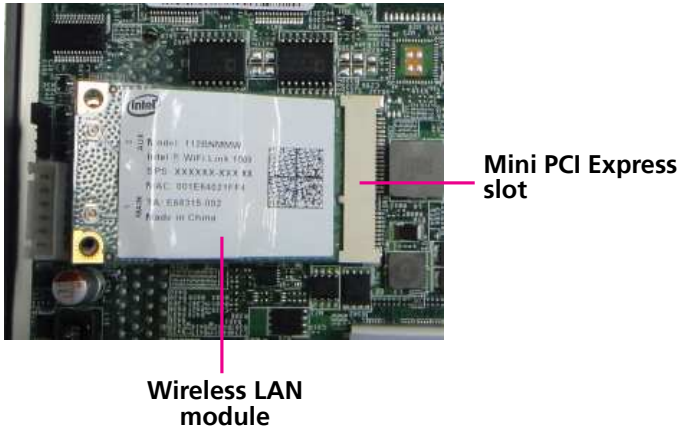


Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Installing a Wireless LAN Module

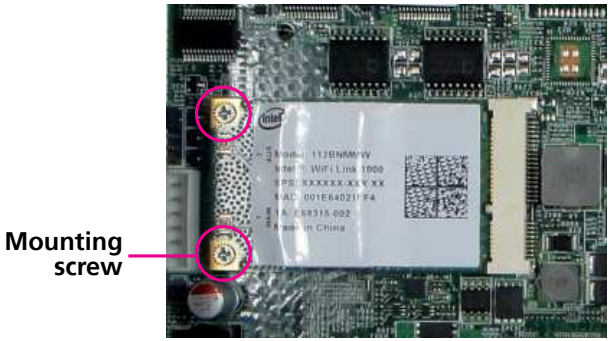
1. Locate the Mini PCI Express slot on the board.

2. Insert the wireless LAN module into the Mini PCI Express slot at a 45 degrees angle until the gold-plated connector on the edge of the module completely disappears inside the slot.



Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

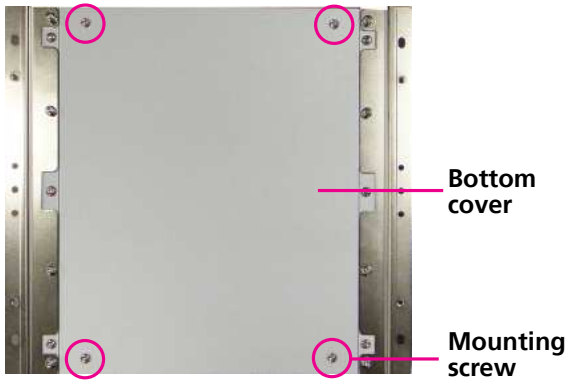
3. Push the module down and then secure it with mounting screws.



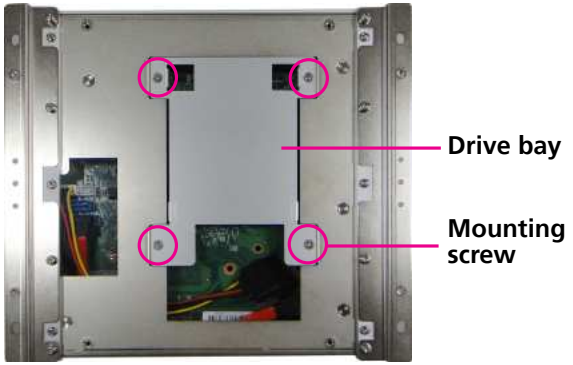
Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Installing a SATA Hard Drive (eCC2100/2100A)

1. With the bottom side of the chassis facing up, remove the mounting screws of the bottom cover and then remove the cover.

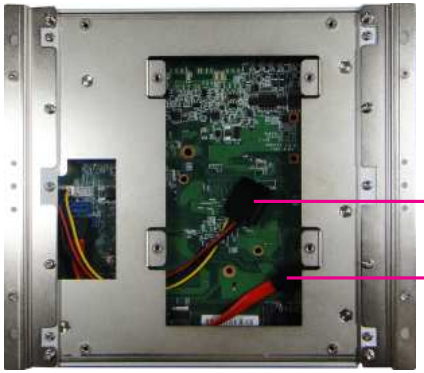


2. Remove the 4 mounting screws that secure the drive bay to the chassis.



Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

3. Noticeable are 2 cables upon removing the drive bay. These are the SATA data cable and the SATA power cable.

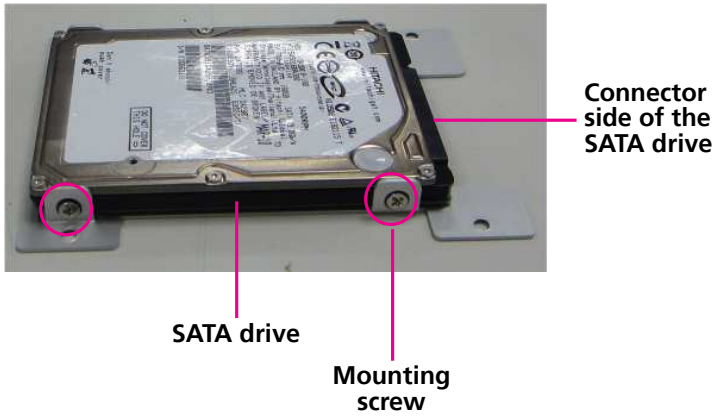


4. The drive bay is used to hold a SATA hard drive.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

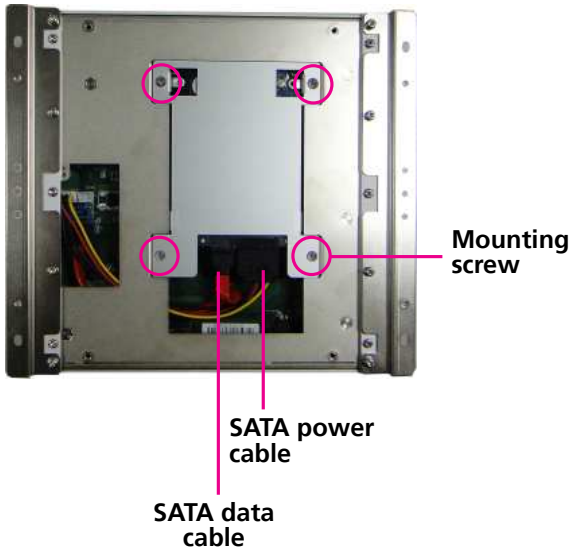
5. Place the SATA hard drive on the drive bay.

   Align the mounting holes that are on the sides of the SATA drive with the mounting holes on the drive bay and then use the provided mounting screws to secure the drive in place.



6. Mount the drive bay back into the chassis and then secure it with mounting screws.

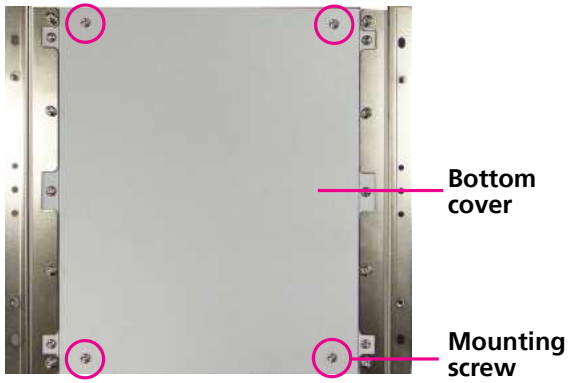
7. Connect the SATA data cable and SATA power cable to the connectors on the SATA drive.



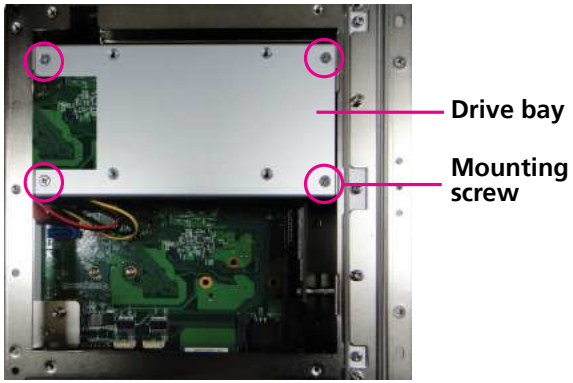
Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Installing a SATA Hard Drive (eCC2110/2110A)

1. With the bottom side of the chassis facing up, remove the mounting screws of the bottom cover and then remove the cover.



2. Remove the 4 mounting screws that secure the drive bay to the chassis and then remove the drive bay.



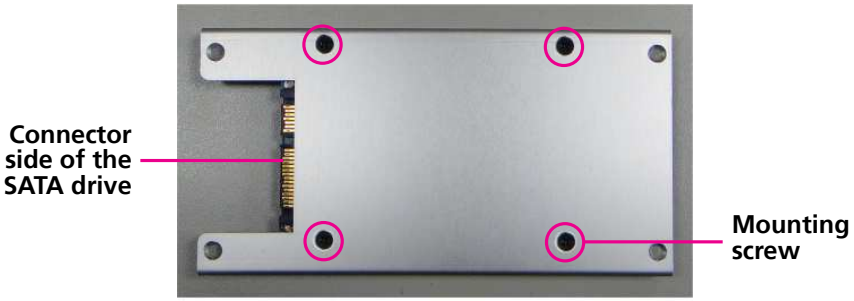
Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

3. The drive bay is used to hold a SATA hard drive.

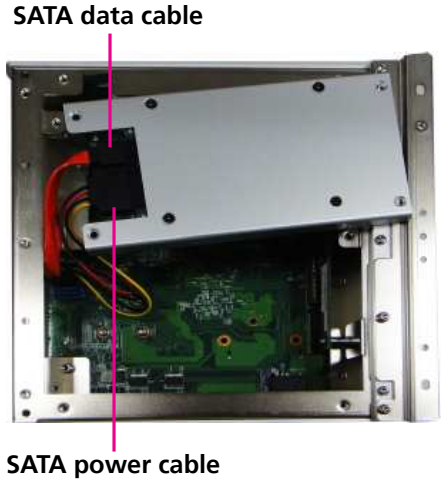
4. Place the SATA hard drive on the drive bay. Align the mounting holes that are on the SATA drive with the mounting holes on the drive bay.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

5. Turn to the other side of the bay and then use the provided mounting screws to secure the SATA drive to the drive bay.

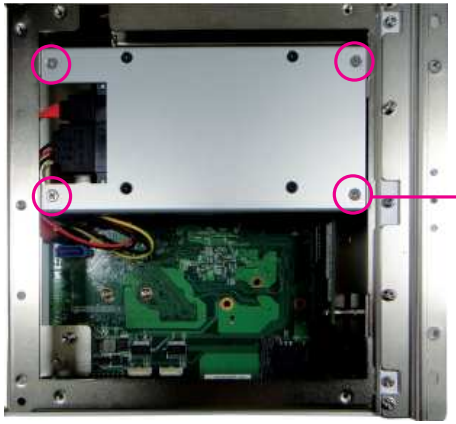


6. Connect the SATA data cable and SATA power cable to the connectors on the SATA drive.



Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

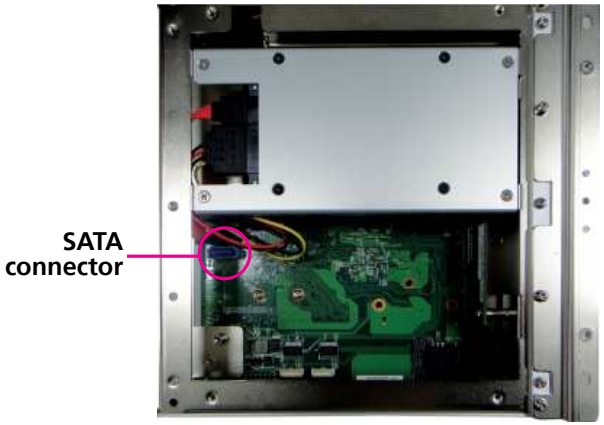
7. Mount the drive bay back into the chassis and then secure it with mounting screws.



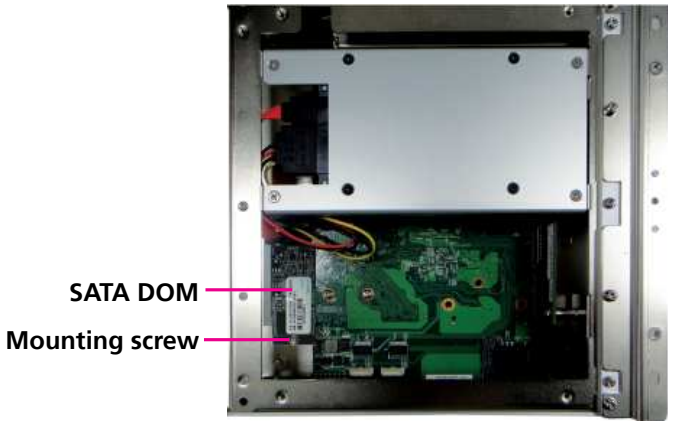
Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

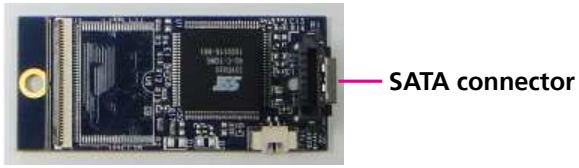
Installing a SATA DOM

1. Locate the SATA connector on the board.



2. Align the SATA connector located on the solder side of the SATA DOM to the SATA connector that is on the board and then press it down firmly. Secure the SATA DOM with the provided mounting screw.





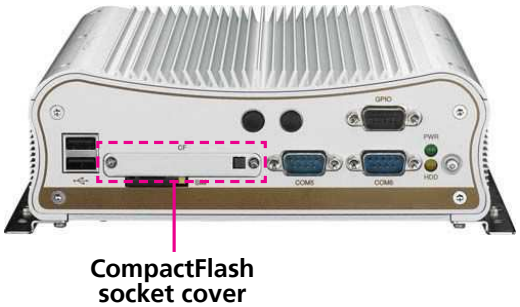
Solder side of
SATA DOM

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

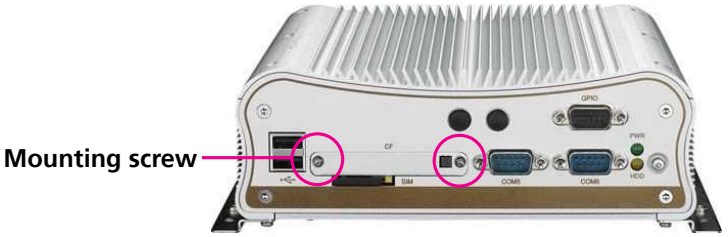
Installing a CompactFlash Card

The installation instructions in this section apply to both the eCC2100/2100A and eCC2110/2110A systems. Illustrations used are that of the eCC2100/2100A.

1. The CompactFlash card must be inserted from the front side of the chassis.

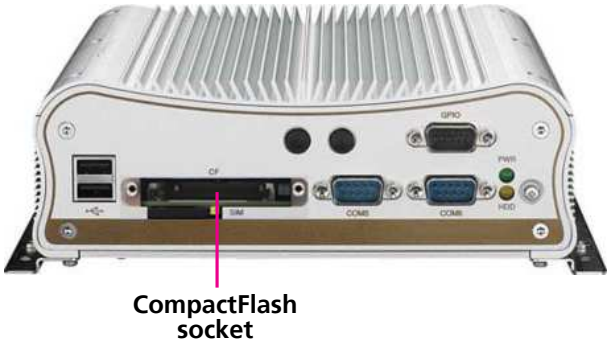


2. Remove the mounting screws of the CompactFlash socket's cover.

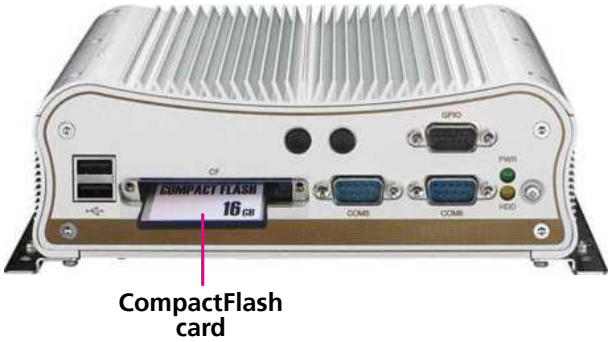


Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

3. Remove the socket's cover to access the CompactFlash socket.



4. With the CompactFlash card's label facing up, insert the card into the socket.



Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

5. Push the eject button to take out the card.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Chapter 4: BIOS Setup

This chapter describes how to use the BIOS setup program for the eCC2100/2110 Series. The BIOS screens provided in this chapter are for reference only and may change if the BIOS is updated in the future.

To check for the latest updates and revisions, visit the EXOR Web site at www.exorint.net

About BIOS Setup

The BIOS (Basic Input and Output System) Setup program is a menu driven utility that enables you to make changes to the system configuration and tailor your system to suit your individual work needs. It is a ROM-based configuration utility that displays the system's configuration status and provides you with a tool to set system parameters.

These parameters are stored in non-volatile battery-backed-up CMOS RAM that saves this information even when the power is turned off. When the system is turned back on, the system is configured with the values found in CMOS.

With easy-to-use pull down menus, you can configure such items as:

- Hard drives, diskette drives, and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power management features

The settings made in the setup program affect how the computer performs. It is important, therefore, first to try to understand all the Setup options, and second, to make settings appropriate for the way you use the computer.

When to Configure the BIOS

This program should be executed under the following conditions:

- When changing the system configuration
- When a configuration error is detected by the system and you are prompted to make changes to the Setup program
- When resetting the system clock
- When redefining the communication ports to prevent any conflicts
- When making changes to the Power Management configuration
- When changing the password or making other changes to the security setup

Normally, CMOS setup is needed when the system hardware is not consistent with the information contained in the CMOS RAM, whenever the CMOS RAM has lost power, or the system features need to be changed.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Default Configuration

Most of the configuration settings are either predefined according to the Load Optimal Defaults settings which are stored in the BIOS or are automatically detected and configured without requiring any actions. There are a few settings that you may need to change depending on your system configuration.

Entering Setup

When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines. These routines perform various diagnostic checks; if an error is encountered, the error will be reported in one of two different ways:

- If the error occurs before the display device is initialized, a series of beeps will be transmitted.
- If the error occurs after the display device is initialized, the screen will display the error message.

Powering on the computer and immediately pressing <Del> allows you to enter Setup. Another way to enter Setup is to power on the computer and wait for the following message during the POST:

```
TO ENTER SETUP BEFORE BOOT
PRESS <CTRL-ALT-ESC>
Press the <Del> key to enter Setup:
```

Legends

Key	Function
Right and Left arrows	Moves the highlight left or right to select a menu.
Up and Down arrows	Moves the highlight up or down between sub-menus or fields.
<Esc>	Exits to the BIOS Setup Utility.
+ (plus key)	Scrolls forward through the values or options of the highlighted field.
- (minus key)	Scrolls backward through the values or options of the highlighted field.
Tab	Selects a field.
<F1>	Displays General Help.
<F10>	Saves and exits the Setup program.
<Enter>	Press <Enter> to enter the highlighted submenu.

Scroll Bar

When a scroll bar appears to the right of the setup screen, it indicates that there are more available fields not shown on the screen. Use the up and down arrow keys to scroll through all the available fields.

Submenu

When "▶" appears on the left of a particular field, it indicates that a submenu which contains additional options are available for that field. To display the submenu, move the highlight to that field and press <Enter>.

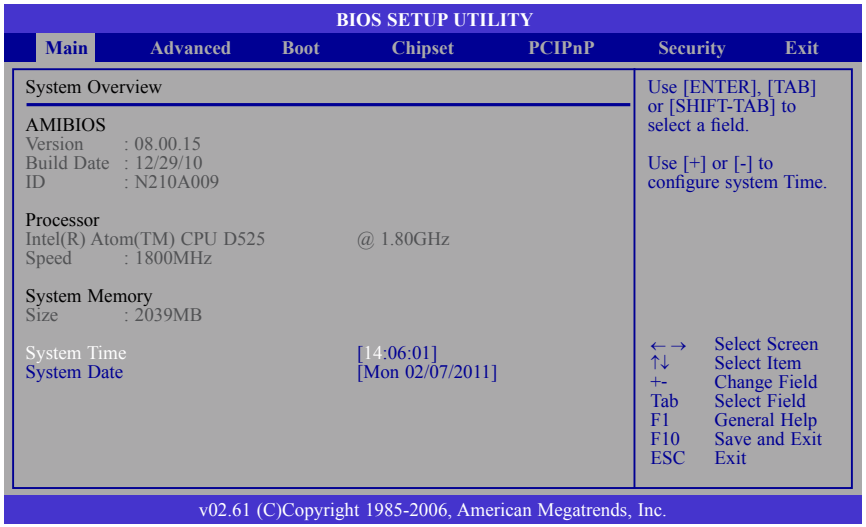
Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

BIOS Setup Utility

Once you enter the AMI BIOS Setup Utility, the Main Menu will appear on the screen. The main menu allows you to select from six setup functions and one exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the submenu.

Main

The Main menu is the first screen that you will see when you enter the BIOS Setup Utility.



AMI BIOS

Displays the detected BIOS information.

Processor

Displays the detected processor information.

System Memory

Displays the detected system memory information.

System Time

The time format is <hour>, <minute>, <second>. The time is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Hour displays hours from 00 to 23. Minute displays minutes from 00 to 59. Second displays seconds from 00 to 59.

System Date

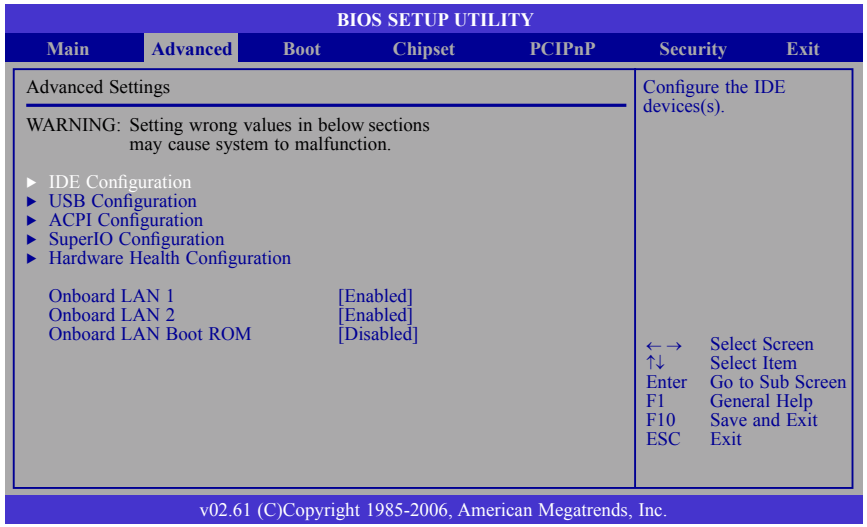
The date format is <day>, <month>, <date>, <year>. Day displays a day, from Sunday to Saturday. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 1999 to 2099.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Advanced

The Advanced menu allows you to configure your system for basic operation. Some entries are defaults required by the system board, while others, if enabled, will improve the performance of your system or let you set some features according to your preference.

Setting incorrect field values may cause the system to malfunction.



IDE Configuration

This section is used to configure the IDE drives.

USB Configuration

This section is used to configure USB devices.

ACPI Configuration

This section is used to configure the Advanced ACPI configuration.

Super IO Configuration

This section is used to configure the I/O functions supported by the onboard Super I/O chip.

Hardware Health Configuration

This section is used to configure the hardware monitoring events such as temperature, fan speed and voltages.

Onboard LAN 1 and Onboard LAN 2

This section is used to enable or disable the onboard LAN.

Onboard LAN Boot ROM

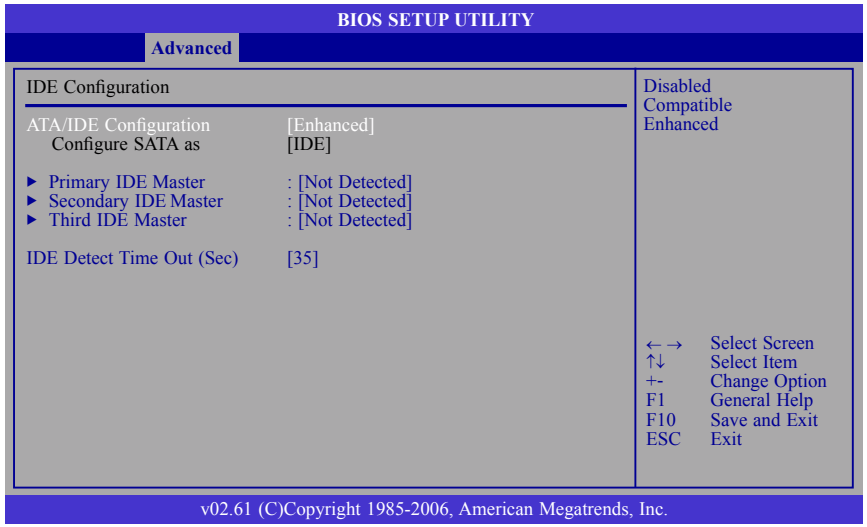
Enable this field if you wish to use the boot ROM (instead of a disk drive) to boot-up the system and access the local area network directly.

If you wish to change the boot ROM's settings, type the <Shift> and <F10> keys simultaneously when prompted during boot-up. Take note: you will be able to access the boot ROM's program (by typing <Shift> + <F10>) only when this field is enabled.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

IDE Configuration

This section is used to configure the IDE drives.



ATA/IDE Configuration

This field is used to configure the IDE drives. The options are Disabled, Compatible and Enhanced.

Configure SATA As

IDE This option configures the Serial ATA drives as Parallel ATA physical storage device.

AHCI This option configures the Serial ATA drives to use AHCI (Advanced Host Controller Interface). AHCI allows the storage driver to enable the advanced Serial ATA features which will increase storage performance.

Primary IDE Master to Third IDE Master

When you enter the BIOS Setup Utility, the BIOS will auto detect the existing IDE devices then displays the status of the detected devices. To configure an IDE drive, move the cursor to a field then press <Enter>.

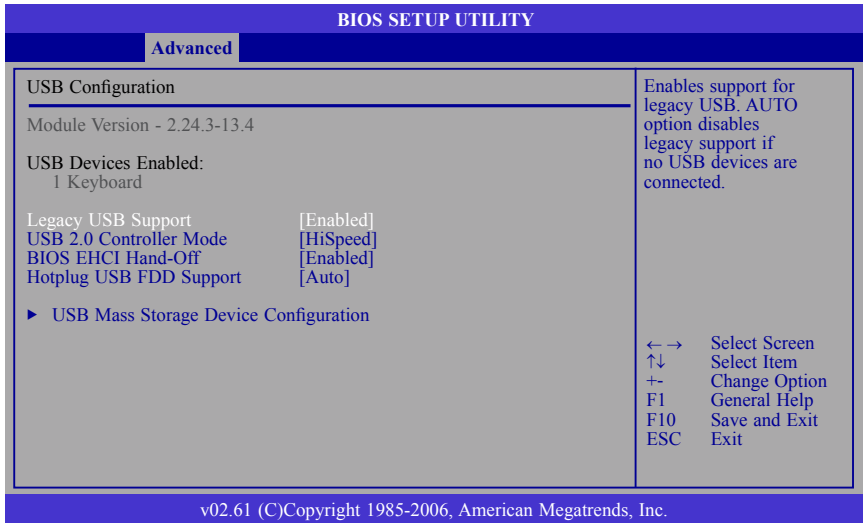
IDE Detect Time Out (Sec)

Selects the time out value for detecting ATA/ATAPI devices.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

USB Configuration

This section is used to configure USB devices.


BIOS SETUP UTILITY
Advanced
USB Configuration
Module Version - 2.24.3-13.4
USB Devices Enabled:
1 Keyboard
Legacy USB Support [Enabled]
USB 2.0 Controller Mode [HiSpeed]
BIOS EHCI Hand-Off [Enabled]
Hotplug USB FDD Support [Auto]
USB Mass Storage Device Configuration
Enables support for legacy USB. AUTO option disables legacy support if no USB devices are connected.
←→ Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
v02.61 (C)Copyright 1985-2006, American Megatrends, Inc.

Legacy USB Support

Due to the limited space of the BIOS ROM, the support for legacy USB keyboard (in DOS mode) is by default set to Disabled. With more BIOS ROM space available, it will be able to support more advanced features as well as provide compatibility to a wide variety of peripheral devices.

If a PS/2 keyboard is not available and you need to use a USB keyboard to install Windows (installation is performed in DOS mode) or run any program under DOS, set this field to Enabled.

USB 2.0 Controller Mode

Sets the USB 2.0 controller mode to HiSpeed (480 Mbps) or FullSpeed (12 Mbps).

BIOS EHCI Hand-Off

Enable this field when using operating systems without the EHCI hand-off support.

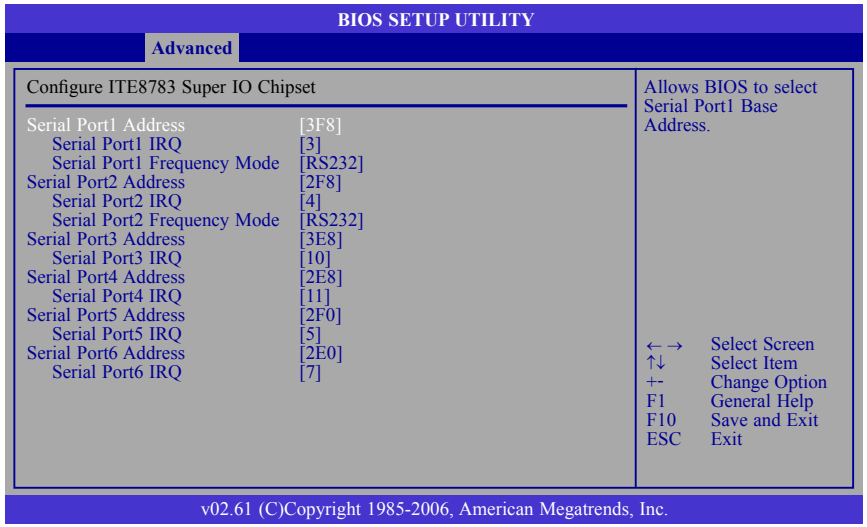
Hotplug USB FDD Support

Enables support for USB FDD hot plug.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Super IO Configuration

This section is used to configure the I/O functions supported by the on-board Super I/O chip.


BIOS SETUP UTILITY
Advanced
Configure ITE8783 Super IO Chipset
Serial Port1 Address [3F8]
Serial Port1 IRQ [3]
Serial Port1 Frequency Mode [RS232]
Serial Port2 Address [2F8]
Serial Port2 IRQ [4]
Serial Port2 Frequency Mode [RS232]
Serial Port3 Address [3E8]
Serial Port3 IRQ [10]
Serial Port4 Address [2E8]
Serial Port4 IRQ [11]
Serial Port5 Address [2F0]
Serial Port5 IRQ [5]
Serial Port6 Address [2E0]
Serial Port6 IRQ [7]
Allows BIOS to select Serial Port1 Base Address.
←→ Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
v02.61 (C)Copyright 1985-2006, American Megatrends, Inc.

Serial Port1 Address to Serial Port6 Address

Auto The system will automatically select an I/O address for the on-board serial port.

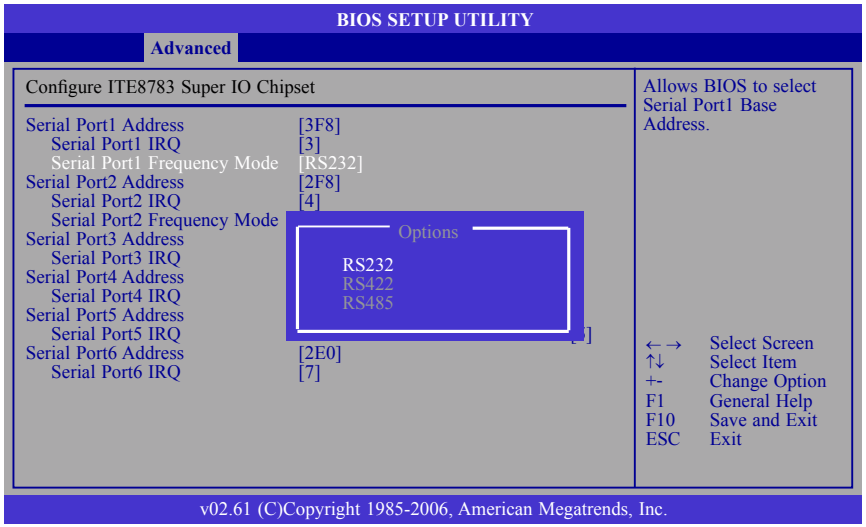
3F8, 2F8, 3E8, 2E8, 2F0, 2E0 Allows you to manually select an I/O address for the onboard serial port.

Disabled Disables the onboard serial port.

Serial Port1 IRQ to Serial Port6 IRQ

These fields are used to select an IRQ for the onboard serial port 1, 2, 3, 4, 5 or 6.

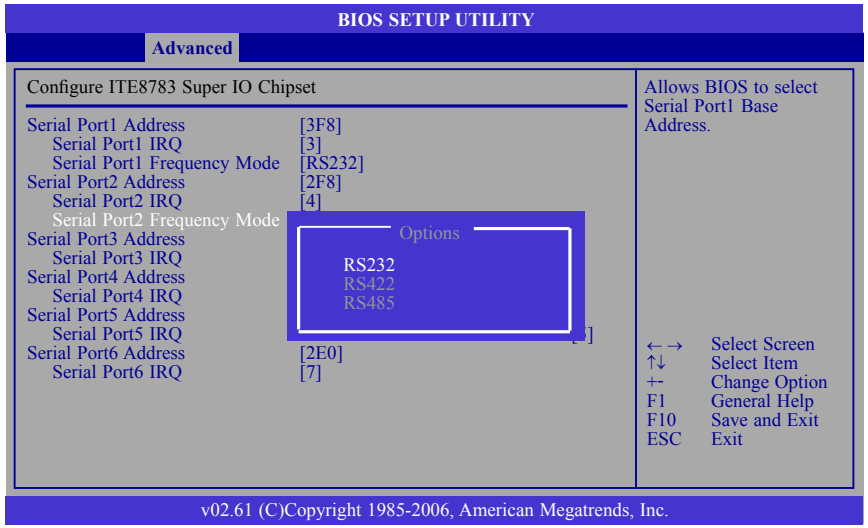
Serial Port1 Frequency Mode



This field is used to select the frequency mode of serial port 1. The options are RS232, RS422 and RS485.

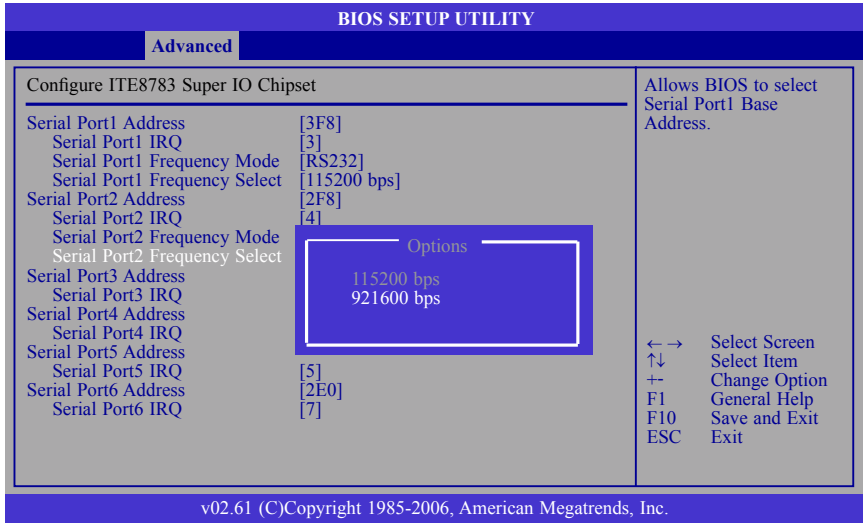
Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Serial Port2 Frequency Mode



This field is used to select the frequency mode of serial port 2. The options are RS232, RS422 and RS485.

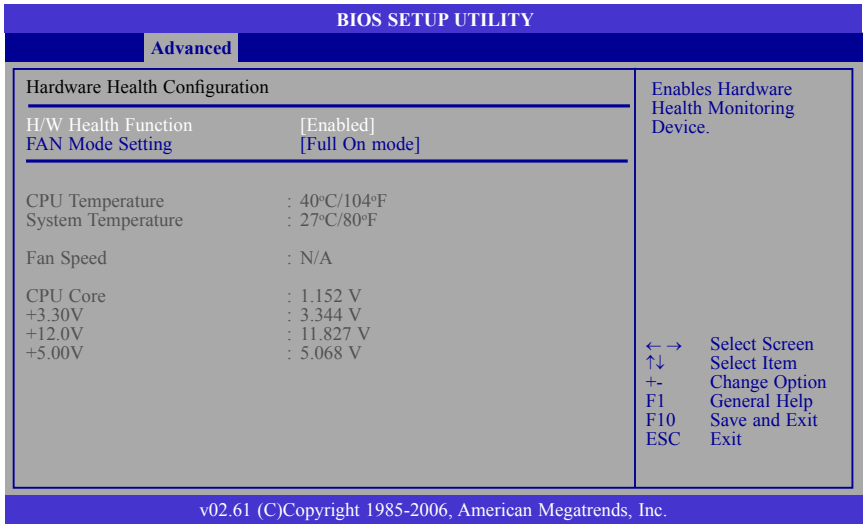
If you selected RS422 or RS485 in the "Serial Port1 Frequency Mode" and/or "Serial Port2 Frequency Mode" field, the "Serial Port1 Frequency Select" and/or "Serial Port2 Frequency Select" field will appear prompting you to select the frequency setting. The options are 115200 bps and 921600 bps.



Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Hardware Health Configuration

This section is used to configure the hardware monitoring events such as temperature, fan speed and voltages.



H/W Health Function

Enables or disables the hardware monitoring function.

CPU Temperature and System Temperature

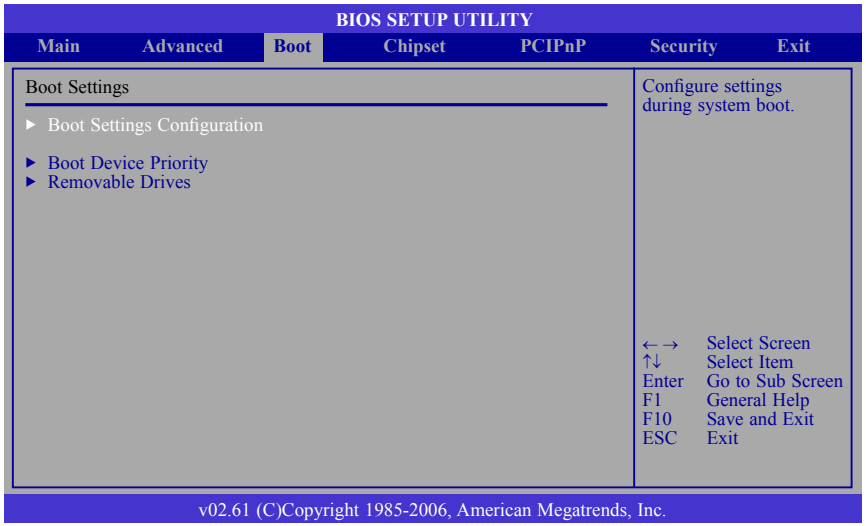
Detects and displays the current temperature of the CPU and the internal temperature of the system.

CPU Core to +5.00V

Detects and displays the output voltages.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Boot



Boot Settings Configuration

This section is used to configure settings during system boot.

Boot Device Priority

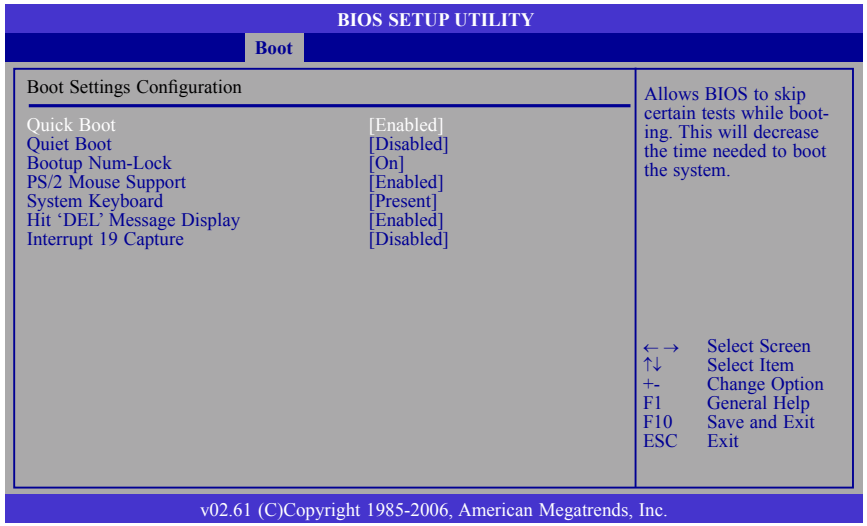
This section is used to select the boot priority sequence of the devices.

Removable Drives

This section is used to select the boot priority sequence of the removable drives.

Boot Settings Configuration

This section is used to configure settings during system boot.


BIOS SETUP UTILITY
Boot
Boot Settings Configuration
Quick Boot [Enabled]
Quiet Boot [Disabled]
Bootup Num-Lock [On]
PS/2 Mouse Support [Enabled]
System Keyboard [Present]
Hit 'DEL' Message Display [Enabled]
Interrupt 19 Capture [Disabled]
Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.
←→ Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
v02.61 (C)Copyright 1985-2006, American Megatrends, Inc.

Quick Boot

When Enabled, the BIOS will shorten or skip some check items during POST. This will decrease the time needed to boot the system.

Quiet Boot

Enabled	Displays OEM logo instead of the POST messages.
Disabled	Displays normal POST messages.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Bootup Num-Lock

This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on wherein the function of the numeric keypad is the number keys. When set to Off, the function of the numeric keypad is the arrow keys.

PS/2 Mouse Support

The options are Auto, Enabled and Disabled.

System Keyboard

Detects the system keyboard.

Hit 'DEL' Message Display

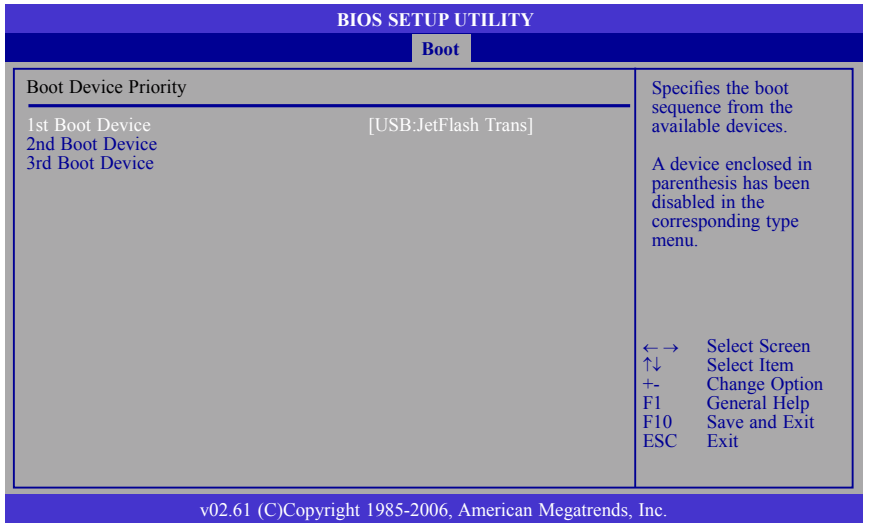
When enabled, the system displays the "Press DEL to run Setup" message during POST.

Interrupt 19 Capture

When enabled, it allows the optional ROM to trap interrupt 19.

Boot Device Priority

This section is used to select the boot priority sequence of the devices.



1st Boot Device to 3rd Boot Device

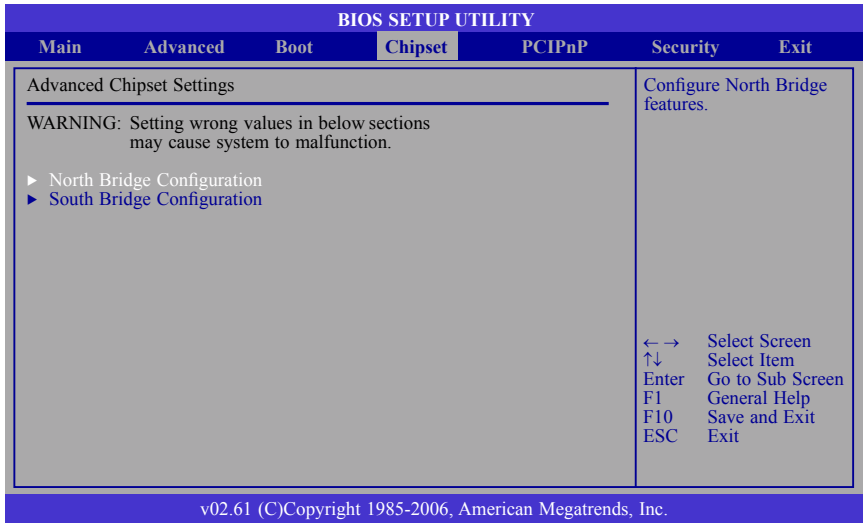
Selects the drive to boot first, second and third in the "1st Boot Device", "2nd Boot Device" and "3rd Boot Device" fields respectively. The BIOS will boot the operating system according to the sequence of the drive selected.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Chipset

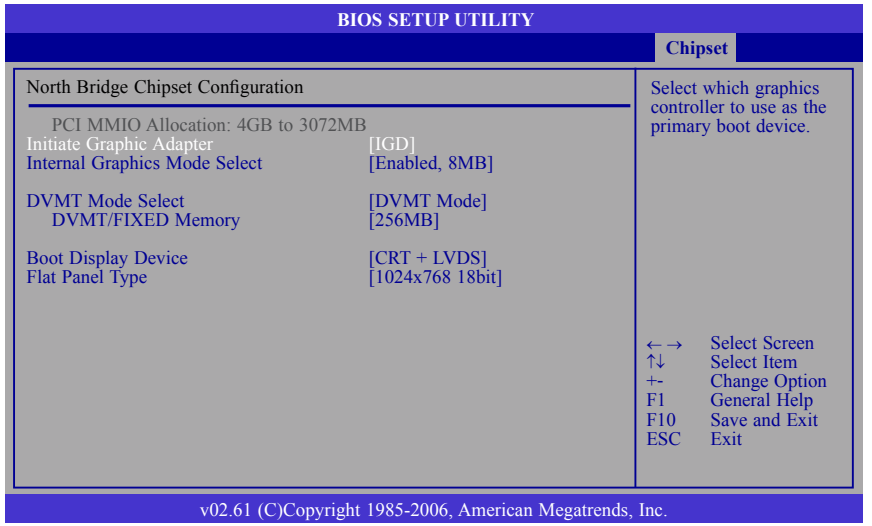
This section is used to configure the system based on the specific features of the chipset.

Setting incorrect field values may cause the system to malfunction.



North Bridge Configuration

This section is used to configure the north bridge features.


BIOS SETUP UTILITY
Chipset
North Bridge Chipset Configuration
PCI MMIO Allocation: 4GB to 3072MB
Initiate Graphic Adapter [IGD]
Internal Graphics Mode Select [Enabled, 8MB]
DVMT Mode Select [DVMT Mode]
DVMT/FIXED Memory [256MB]
Boot Display Device [CRT + LVDS]
Flat Panel Type [1024x768 18bit]
Select which graphics controller to use as the primary boot device.
← → Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
v02.61 (C)Copyright 1985-2006, American Megatrends, Inc.

Initiate Graphic Adapter

Selects the graphics controller to use as the primary boot device.

Internal Graphics Mode Select

Selects the amount of system memory used by the internal graphics device.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

DVMT Mode Select

The options are Fixed mode and DVMT mode.

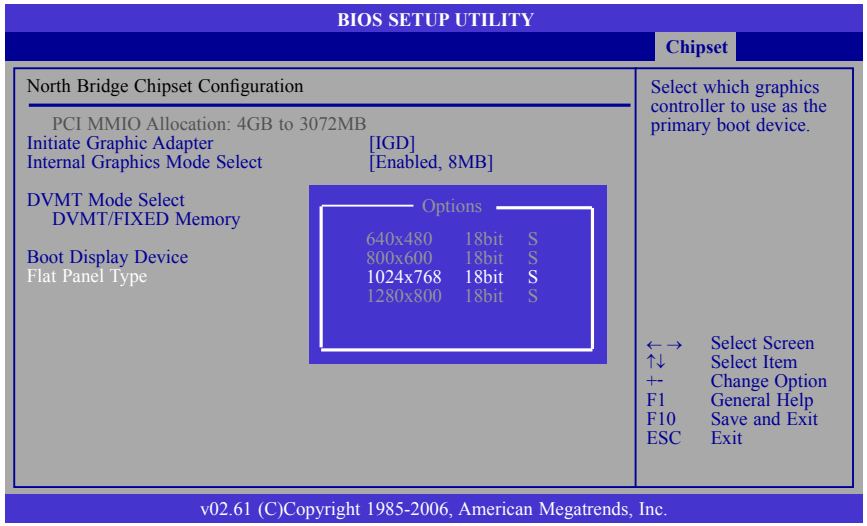
DVMT/Fixed Memory

This field is used to select the graphics memory size used by DVMT/Fixed mode.

Boot Display Device

This field is used to select the type of display to use when the system boots.

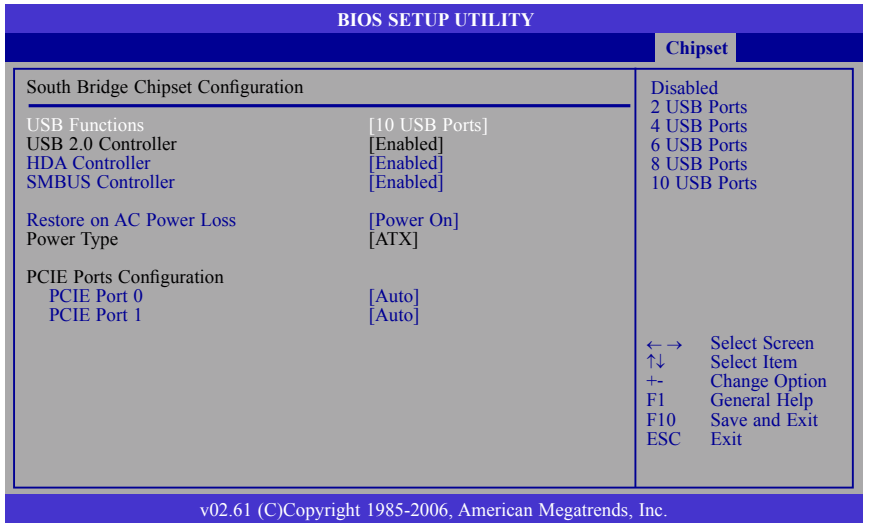
Flat Panel Type



Selects the type of flat panel connected to the system. The supported LVDS are 640x480 18bit, 800x600 18bit, 1024x768 18bit and 1280x800 18bit.

South Bridge Configuration

This section is used to configure the south bridge features.



USB Functions

Enables or disables USB devices.

USB 2.0 Controller

This field is used to enable or disable the Enhanced Host Controller Interface (USB 2.0).

HDA Controller

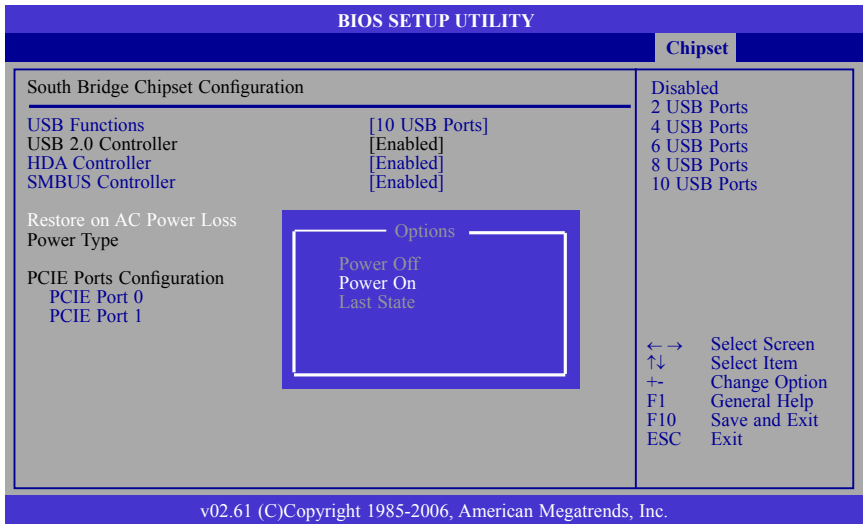
Enables or disables the onboard audio.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

SMBUS Controller

Enables or disables the SMBUS.

Restore On AC Power Loss



Power Off — When power returns after an AC power failure, the system's power is off. You must press the Power button to power-on the system.

Power On — When power returns after an AC power failure, the system will automatically power-on.

Last State — When power returns after an AC power failure, the system will return to the state where you left off before power failure occurs. If the system's power is off when AC power failure occurs, it will remain off when power returns. If the system's power is on when AC power failure occurs, the system will power-on when power returns.

Power Type

Selects the type of power used.

PCIE Port 0 and PCIE port 1

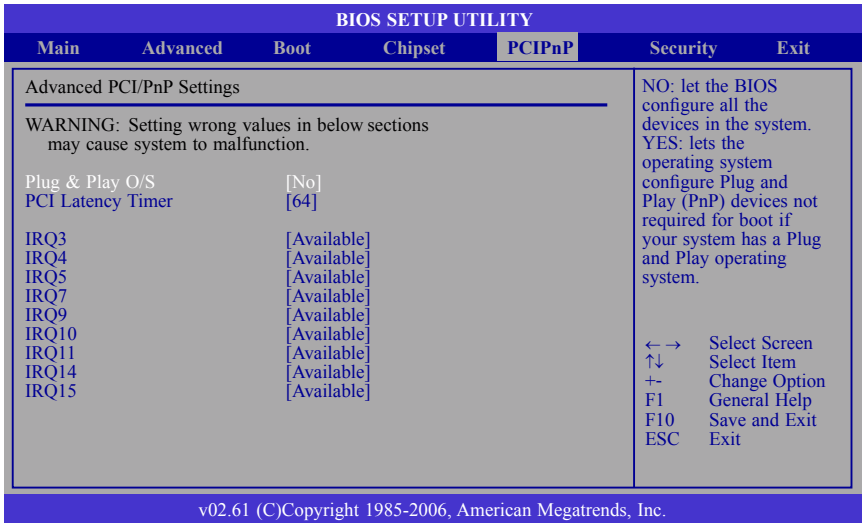
Configures the PCIE ports.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

PCIPnP

This section is used to configure settings for PCI/PnP devices.

Setting incorrect field values may cause the system to malfunction.



Plug & Play O/S

Yes Configures Plug and Play (PnP) devices that are not required to boot in a Plug and Play supported operating system.

No The BIOS configures all the devices in the system.

PCI Latency Timer

This feature is used to select the length of time each PCI device will control the bus before another takes over. The larger the value, the longer the PCI device can retain control of the bus. Since each access to the bus comes with an initial delay before any transaction can be made, low values for the PCI Latency Timer will reduce the effectiveness of the PCI bandwidth while higher values will improve it.

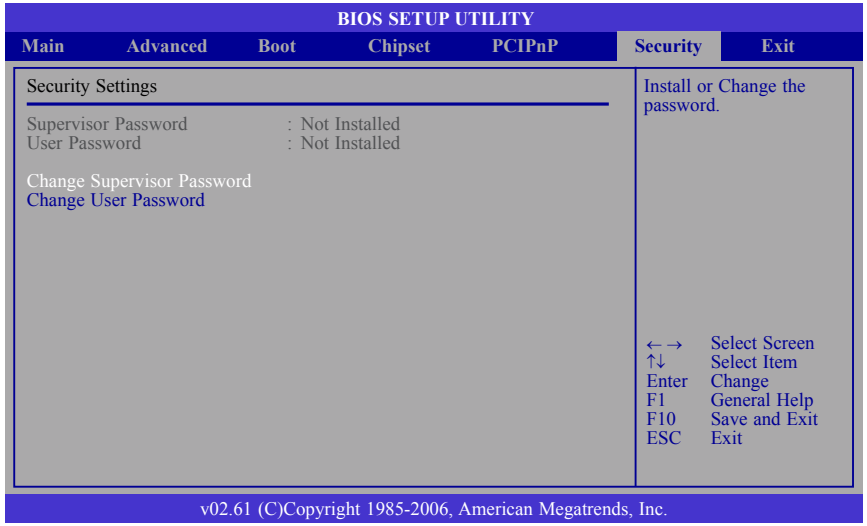
IRQ3 to IRQ15

Available The specified IRQ is available for PCI/PnP devices.

Reserved The specified IRQ is reserved for Legacy ISA devices.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Security



Change Supervisor Password

This field is used to set or change the supervisor password.

To set a new password:

1. Select the Change Supervisor Password field then press <Enter>.
2. Type your password in the dialog box then press <Enter>. You are limited to eight letters/numbers.
3. Press <Enter> to confirm the new password.
4. When the Password Installed dialog box appears, select OK.

To change the password, repeat the same steps above.

To clear the password, select Change Supervisor Password then press <Enter>. The Password Uninstalled dialog box will appear.

If you forgot the password, you can clear the password by erasing the CMOS RTC (Real Time Clock) RAM using the RTC Clear jumper. Refer to chapter 2 for more information.

Change User Password

This field is used to set or change the user password.

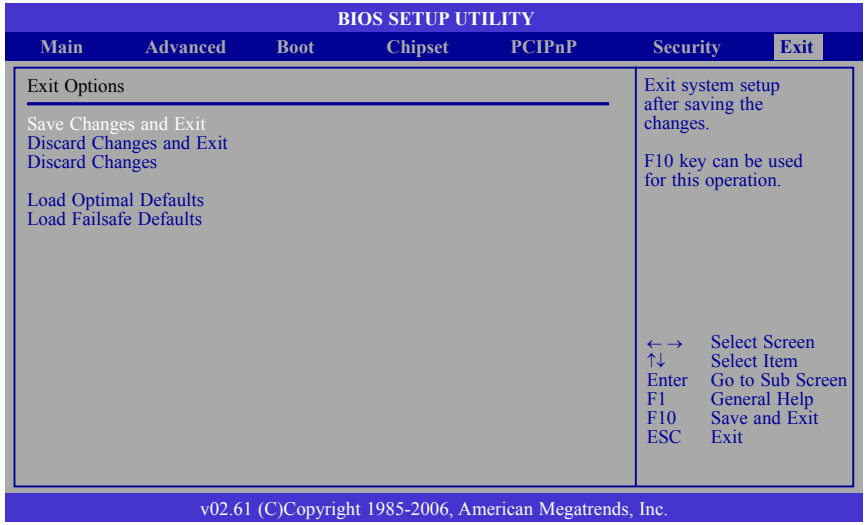
To set a new password:

1. Select the Change User Password field then press <Enter>.
2. Type your password in the dialog box then press <Enter>. You are limited to eight letters/numbers.
3. Press <Enter> to confirm the new password.
4. When the Password Installed dialog box appears, select OK.

To change the password, repeat the same steps above.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Exit



Save Changes and Exit

To save the changes and exit the Setup utility, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes. You can also press <F10> to save and exit Setup.

Discard Changes and Exit

To exit the Setup utility without saving the changes, select this field then press <Enter>. You may be prompted to confirm again before exiting. You can also press <ESC> to exit without saving the changes.

Discard Changes

To discard the changes, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes to discard all changes made and restore the previously saved settings.

Load Optimal Defaults

Loads the optimal default values from the BIOS ROM.

Load Failsafe Defaults

Loads the fail-safe default values from the BIOS ROM.

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Appendix A: Power Consumption

Test Configuration

System Configuration	Sys#1
Chassis	CHASSIS eCC2110 Ver. A
CPU	Intel® Atom™ processor D525 (1M Cache, 1.80 GHz)
Memory	Apacer 1GB SOD PC3-10600 (industrial)
HDD	N/A
FDD	N/A
CD-ROM	N/A
CompactFlash device	Apacer 8G (industrial)
Power Supply	POWER ADAPTER SPI:G.P FSP65-AAB(N091)
Add-on Card	N/A
CPU Cooler	eCC2100 HEATSINK
System Fan	N/A
Keyboard	LEMEL B-5201-P
Mouse	GENIVS EASY MOUSE PS/2

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Power Consumption Measurement

Purpose

The purpose of the power consumption test is to verify the power dissipation of the system and the load of the power supply.

Test Equipment

PROVA CM-07 AC/DC CLAMP METER

Device Under Test

DUT: Sys #1

Test Procedure

1. Power up the DUT and then boot Windows XP.
2. Enter the standby mode (HDD power down).
3. Measure the power consumption and record it.
4. Run the Burn-in test program to apply 100% full loading.
5. Run the Intel Kpower program.
5. Run the LAN Packet Counter and Receive program.

Test Data

	Sys #1
	+12V
Full-Loading Mode	2.18A
Total	26.16W
Standby Mode	0.9A
Total	10.8W

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Appendix B: GPI/O Programming guide

GPI/O (General Purpose Input/Output) pins are provided for custom system design. This appendix provides definitions and its default setting for the ten GPI/O pins in the eCC2100/2110 Series. The pin definition is shown in the following table:

Pin	GPI/O Mode	Power On Default	Address	Pin	GPI/O Mode	Power On Default	Address
1	VCC	-	-	2	GND	-	-
3	GPO	Low	284h (Bit4)	4	GPI	High	284h (Bit0)
5	GPO	Low	284h (Bit5)	6	GPI	High	284h (Bit1)
7	GPO	Low	284h (Bit6)	8	GPI	High	284h (Bit2)
9	GPO	Low	284h (Bit7)	10	GPI	High	284h (Bit3)

J8 - GPI/O connector

Control the GPO pin (3/5/7/9) level from I/O port 284h bit (4/5/6/7). The bit Set/Clear indicated output High/Low.

GPIO Programming Sample Code

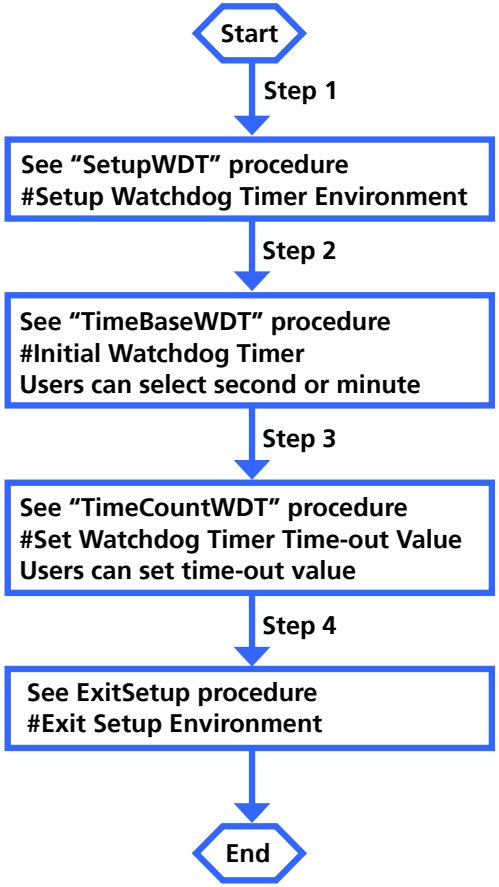
```
#define GPIO_PORT 0x284
#define GPO3 (0x01 << 4)
#define GPO5 (0x01 << 5)
#define GPO7 (0x01 << 6)
#define GPO9 (0x01 << 7)
#define GPO3_HI outportb(GPIO_PORT, 0x10)
#define GPO3_LO outportb(GPIO_PORT, 0x00)
#define GPO5_HI outportb(GPIO_PORT, 0x20)
#define GPO5_LO outportb(GPIO_PORT, 0x00)
#define GPO7_HI outportb(GPIO_PORT, 0x40)
#define GPO7_LO outportb(GPIO_PORT, 0x00)
#define GPO9_HI outportb(GPIO_PORT, 0x80)
#define GPO9_LO outportb(GPIO_PORT, 0x00)
void main(void)
```

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

```
{
GPO3_HI;
GPO5_LO;
GPO7_HI;
GPO9_LO;
}
```

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

Appendix C: Watchdog Timer Setting



Copyright © 2014 EXOR International S.p.A. All Rights Reserved.

ITE8783 WatchDog Programming Guide

```
#define SUPERIO_PORT    0x2E
#define WDT_SET         0x72
#define WDT_VALUE       0x73

void main(void)
{
  #Enter SuperIO Configuration
        outportb(SUPERIO_PORT, 0x87);
        outportb(SUPERIO_PORT, 0x01);
        outportb(SUPERIO_PORT, 0x55);
        outportb(SUPERIO_PORT, 0x55);

  # Set LDN
        outportb(SUPERIO_PORT,0x07);
        outportb(SUPERIO_PORT+1 ,0x07);

  # Set WDT setting
        outportb(SUPERIO_PORT, WDT_SET);
        outportb(SUPERIO_PORT+1 , 0xC0);
        # Use the Second to come down
        # If choose the Minute, change value to 0x40

  # Set WDT sec/min
        outportb(SUPERIO_PORT, WDT_VALUE);
        outportb(SUPERIO_PORT+1 , 0x05);          #Set 5 seconds
}
```

Copyright © 2014 EXOR International S.p.A. All Rights Reserved.